



MORRIS

Seeding, Tillage and Haying Solutions

**6000 Series
AIR CART**

**OPERATOR'S
Manual**
ASSEMBLY INSTRUCTIONS

N20314-03

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1 Check List

SAFETY-ALERT SYMBOL



Watch for this symbol. It identifies potential hazards to health or personal safety. It points out safety precautions. It means: ATTENTION - BE ALERT. Your safety is involved.

Please read the Operator's Manual carefully and become a "SAFE" operator.

Adopt a good lubrication and maintenance program.

Note: Ownership Verification Form must be completed and submitted to Morris Industries Ltd. within 30 days of the delivery date.

Warranty Void if Not Registered.

(/) Lubrication: GREASE

___ Castor axle bearings

___ Jack shaft bearings

___ Slow speed kit bearings

___ Tow behind castor pivot

(/) TIRE PRESSURE

___ See Section 5.10

(/) GENERAL

___ Check if assembled correctly

___ Proper Chain Tension

(/) TRANSPORT

___ SMV emblem are properly installed

___ Tighten wheel bolts Section 5.10

___ Check hose connections

OWNER REFERENCE:

Model _____

Serial No. _____

Dealer No. _____

Town _____

Prov. (State) _____

Phone _____

OWNER/OPERATOR _____

Date _____

2 Introduction

2.1 This Operator's Manual has been carefully prepared to provide the necessary information regarding operation and adjustments, so that you may obtain maximum service and satisfaction from your new 6000 Series Air Seeder.

To protect your investment, study your Manual before starting or operating in the field.

If you should find that you require information not covered in this manual, contact your local **MORRIS** Dealer. He will be glad to answer any questions that may arise regarding the operation of your Air Seeder. Our Dealers are kept informed on the best methods of servicing and are equipped to provide prompt and efficient service if needed.



MORRIS 6300 Air Seeder

Your Air Seeder is designed to give satisfaction even under difficult conditions. A small amount of time and effort spent in protecting it against rust, wear and replacing worn parts will increase the life and trade-in value.

Keep this book handy for ready reference at all times. It is the policy of **MORRIS INDUSTRIES LTD.** to improve its products whenever it is possible and practical to do so. We reserve the right to make changes or add improvements any time without incurring any obligation to make such changes on machines sold previously.

2.1 INTRODUCTION (Continued)

The **MORRIS** 6000 Series Air Seeder represents the latest in Airseeder design technology. There are four sizes available, a 130 bu., 180 bu., 240 bu. & 300 bu. hydraulic fan drive or a engine fan drive. The units incorporate a three wheel, wide-stanced high clearance frame, which gives easy access to the metering wheels and the easiest cleanout in the industry. Each tank is split 50:50 and the lids are easily accessed by the convenient stairs and tank walk-through.

Each tank has it's own metering system and metering drive. Included with the unit is a sample collector box that an operator can use to confirm seeding rates. The meter drives are positive, convenient, simple to set and are ground driven through an electric clutch. The metering system incorporates spiral fluted wheels. The size of the metering wheel is matched to the number of outlets on the secondary divider giving the best in accuracy. The spiral fluted metering wheels combined with the multi-range transmission allows a full range of products like canola to peas to be seeded without having to change the metering wheels.

The Air Seeder comes equipped with a monitor that senses both bin levels, motion of both metering shafts and fan speed. It also gives ground speed and provides an acremeter.

High quality 2 1/2 diameter hose is standard equipment for the distribution system. The patented flat fan divider, which is matched in size to the metering wheel, ensures final accurate distribution of the product.



MORRIS 6180 Airseeder & 31 Ft. 8900 Floating Hitch Cultivator

2.2 OPTIONS

Auger

A hydraulically driven Auger that can conveniently load and unload the Air Seeder whether it is set up in either single or double shoot configuration.

Second Clutch

The Second clutch allows independent operation of the rear metering bodies, which is often utilized when separate fertilization is required. Both clutches are independent and are operated from the tractor cab.

Double Shoot Distribution

This is used when fertilizer is placed at a separate depth from the seed.

Introduction

2.2 OPTIONS (Continued)

Seeding and Banding Openers and Boots

MORRIS offers a variety of opener and boot combinations.

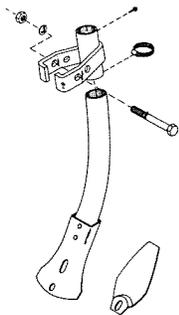


Figure 1

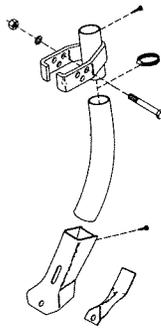


Figure 1A

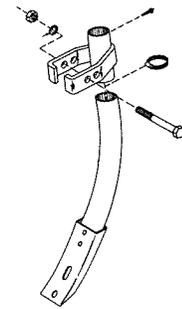


Figure 2

- 1) There is a standard seed boot (Figure 1), that is recommended for 12" spacing but can also be used on 9" spacing providing 12" shovels are installed on the cultivator. The seed is placed in a broadcast pattern with little or no row definition giving excellent swath support.
- 1A) This seed boot (Figure 1A), can be used on 8", 9" or 12" spacing and can be used for seeding or banding. The slightly flared boot gives 4 1/2" seed broadcast directly behind the shank. The design of this boot also allows it to be used in clay soils.
- 1B) The seeding/banding boot (Figure 1B), can be used as a seeding boot on 9" spacing with 14" sweeps, but, it is not recommended for seeding on 12" spacing. The primary reason being the spread of 2" - 3" resulting in a large space 9" - 10" between each row which results in poor swath support. This boot is excellent for banding fertilizer as the spread is very small so reducing nitrogen losses to a minimum. It can also be used as a seeding boot on 8" spacing.

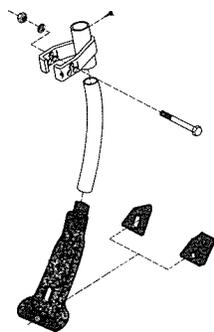


Figure 2

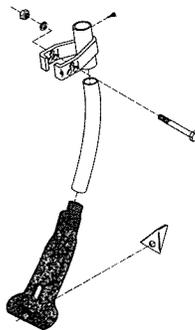


Figure 2A

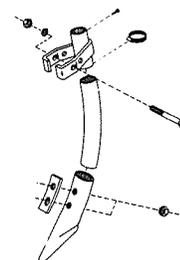


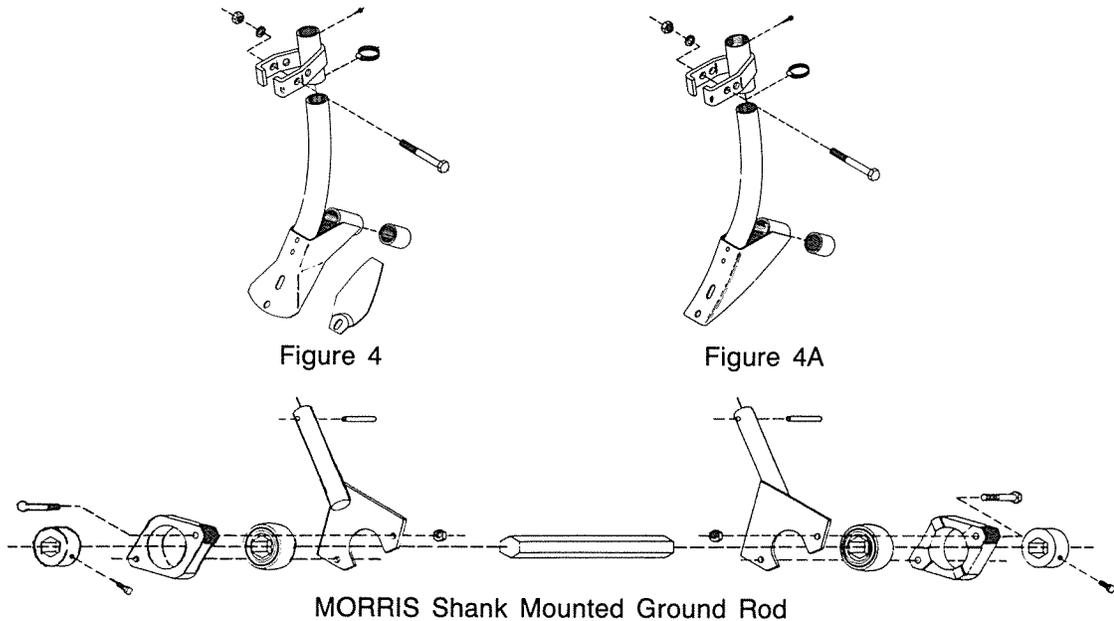
Figure 3

- 2) The cast boot (Figure 2), is adaptable to 9" or 12" spacing simply by exchanging a splitter that mounts in behind the boot. In either case the net result is a general broadcast pattern. This boot can only be used on chisel plow shanks.
- 2A) This cast boot (Figure 2A), can be used for 8" or 9" spacing on field cultivator shanks. The seed is placed in a general broadcast pattern with little or no row definition.
- 3) The chrome point knife opener (Figure 3), is used for applying fertilizer when a minimum of soil disturbance is desired. The boot used with the knife opener can be used for narrow band seeding operations resulting in a row width of approximately 3/4". This configuration can also be used to seed winter wheat.

2.2 OPTIONS (Continued)

Shank Mounted Ground Rod

MORRIS offers two different seed boots with the shank mounted ground rod. The rod will pack the seed bed while leaving the trash and weeds on the soil surface.



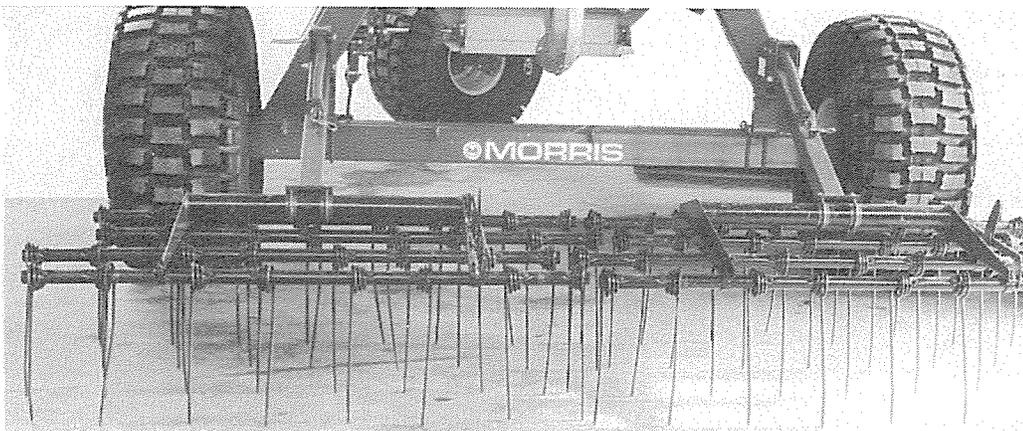
- 4) There is a standard seed boot (Figure 4), that is recommended for 12" spacing but can also be used on 9" spacing providing 12" shovels are installed on the cultivator. The seed is placed in a broadcast pattern with little or no row definition giving excellent swath support.
- 4A) The seeding/banding boot (Figure 4A), can be used as a seeding boot on 9" spacing with 14" sweeps, but, it is not recommended for seeding on 12" spacing. The primary reason being the spread of 2" - 3" resulting in a large space 9" - 10" between each row which results in poor swath support. This boot is excellent for banding fertilizer as the spread is very small so reducing nitrogen losses to a minimum. It can also be used as a seeding boot on 8" spacing.

Mounted Packer

MORRIS offers mounted packers for in row packing of seed. The packers feature a quick change device making it easy to change over to harrows when packing is not desired.

Mounted Harrows

MORRIS harrow mounting bracket kit (N20772), allows two six foot harrows to be attached on the tow behind airseeder models. The harrows will eradicate the airseeder tracks.

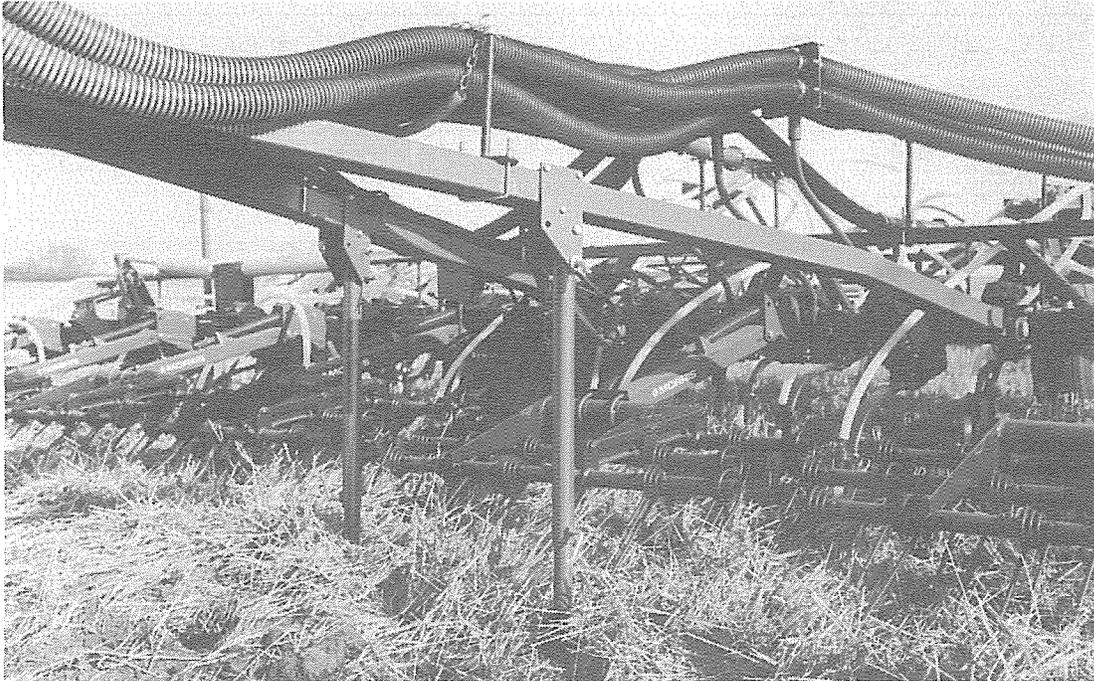


Introduction

2.2 OPTIONS (Continued)

Hitch Stand

The hitch stand allows for easier hook-up and disconnecting of the tow behind airseeder models from the seeding tool.

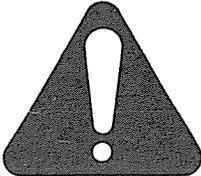


Granular Applicator

MORRIS offers two granular applicators: a 28 cu. ft. tank for the 6130 and 6180 and a 40 cu. ft. tank for the 6240 and 6300. The granular applicator is required to apply clay and limestone based granular chemicals.



SAFETY-ALERT SYMBOL



Watch for this symbol. It identifies potential hazards to health or personal safety. It means:
**ATTENTION – BE ALERT.
Your Safety Is Involved.**

Familiarize yourself with the location of all decals. Read them carefully to understand the safe operation of your machine.

THREE WORDS ARE USED IN CONJUNCTION WITH THE SAFETY-ALERT SYMBOL:



Tells you that a hazard exists which would result in a high probability of death or serious injury if proper precautions are not taken.



Tells you that a hazard exists which can result in injury or death if proper precautions are not taken.



Tells you to remember safety practises, or directs attention to unsafe practices which could result in personal injury if proper precautions are not taken.

2.3 GUIDELINES FOR AIRSEEDER OPERATION

There are a number of areas that can cause problems when seeding. Listed below are specific points that should be addressed at all times. Following these guidelines will ensure better crop emergence and consequently the potential for better yields.

Improperly levelled cultivators cause uneven depth which could result in poor emergence.

It is important that the cultivator is levelled both side to side and front to back.

- (a) **Initially check tire pressures** to make sure they are as specified. Incorrect tire pressures can cause depth variations.
- (b) **Level the cultivator side to side.** (Fig. 5)
Check the depth of each shovel on the back row. Adjust the individual depth control mechanisms on each frame as necessary to level the machine.

Introduction

2.3 GUIDELINES FOR AIRSEEDER OPERATION (Continued)

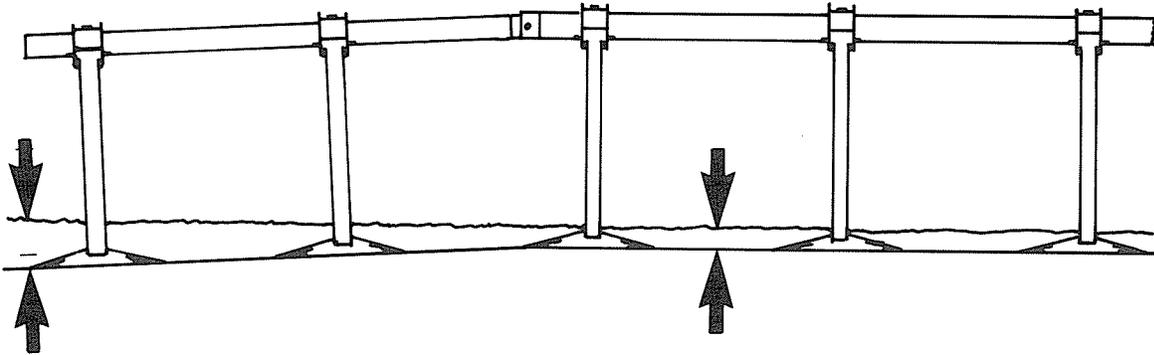


Figure 5

- (c) **Level the cultivator front to rear.**
Poor front to rear levelling causes ridging as shown in Figure 6.

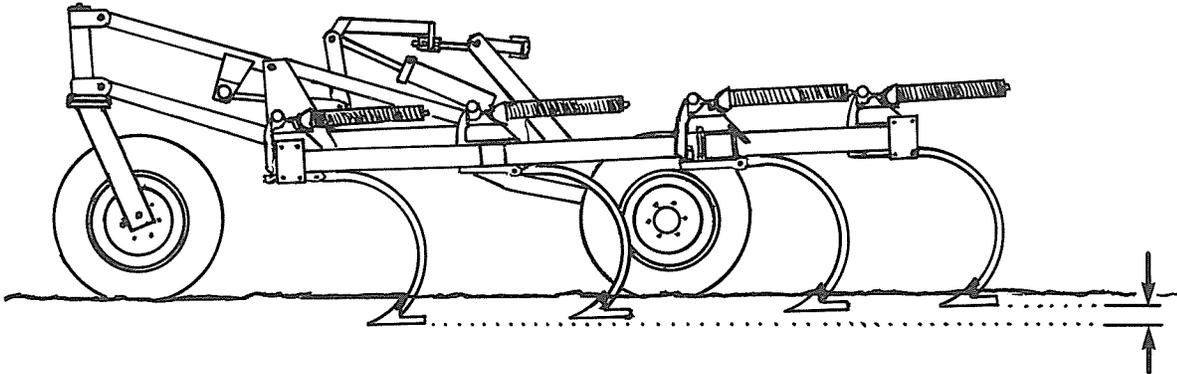


Figure 6

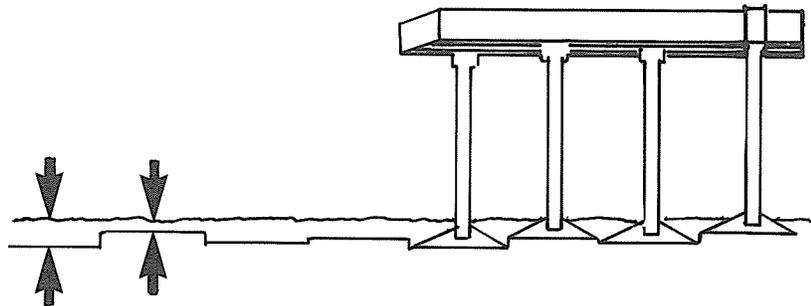


Figure 7

Check the depth of two adjacent shanks. (Fig. 7) normally one on the front row and one on the rear row. Adjust the hitch as necessary to level the machine.

On the Floating Hitch cultivators each gauge wheel will have to be adjusted to level the unit front to back. For further details on levelling of the cultivator consult the respective owners manual.

2.3 GUIDELINES FOR AIRSEEDER OPERATION (Continued)

- (d) **Worn Cultivator Parts**

Shanks that are bent cause uneven depth and they should be repaired or replaced.
Trip mechanisms that are worn can also cause poor depth control and any worn parts should be repaired or replaced.
- (e) **Packing and Harrowing with the **MORRIS** Rangler II/Rangler III.**

Packing and Harrowing behind the Airseeder cultivator combination is strongly recommended. This improves germination, kills weeds and helps reduce moisture loss and erosion. **MORRIS** offers mounted packers for in row packing of seed.
- (f) **Turning**

Avoid sharp turns. Backing up of the outer wings with the cultivator in the ground has a tendency to plug the seed boot with soil. Raise seed boots fully before making sharp turns or backing machine.
- (g) **Seed Rate Settings**
 1. Remove any caked-on material from sliders and metering wheels.
 2. Ensure all sliders are properly set. (See Section 4.6).
 3. Check seed rates carefully. (See Section 4.8).
- (h) **Fertilizer Application**
 1. Avoid using fertilizers that absorb moisture readily, especially during periods of high humidity.
 2. Also avoid fertilizers that contain a high percentage of fine dust, as these materials can plug metering wheels and coat the inside of seed distribution system.
- (i) **Fan Setting (See Section 9.12)**

Run fan at recommended speed, excessive speed will cause increased wear on air system and damage seed. Allow tractor hydraulic oil to warm up thoroughly prior to seeding. Cold oil will cause slower fan speeds (Hydraulic driven fan).
- (j) **Product Application**
 1. Control product application with the clutch switch in tractor.
 2. Have machine moving forward before lowering seed boots to avoid plugging.
 3. To prevent skipping, allow 15 feet of forward travel to ensure air system has delivered product to seed boots.
- (k) **Adjustments and operational checks**

When changing fields and periodically throughout the day the cultivator should be checked for level and depth and the seed boots for blockage.
- (l) **Checking Seed Flow**

The following procedure should be implemented throughout the day typically at each fill of the Airseeder:

 1. Raise the Cultivator out of the ground.
 2. With the fan running turn the crank on the rear transmission 4 or 5 turns.
 3. Seed and/or fertilizer should appear at each outlet on the ground.
 4. If no seed or fertilizer appears on the ground at any of the openers check for hose blockage in both the 1" dia. secondary and the 2 1/2" dia. primary hose, as well as in the flat fan divider.
 5. See Trouble Shooting section (Section 5) for possible causes of the blockage.
- (m) **Moisture Alert**

Whenever airseeder has been standing for an hour or more during period of high humidity or damp, rainy days, or after sitting overnight, run fan at recommended r.p.m., with machine stationary for 5 minutes (See Section 5.1).
- (n) **Monitor**

Recognize and correct alarm conditions as indicated on the machine.
- (o) **Tank Low In Product**

Refill tank before metering wheels are exposed. The metering wheels must be completely covered to avoid unseeded strips.

3 Safety



CAUTION! ALWAYS WEAR SAFETY GOGGLES, BREATHING APPARATUS AND GLOVES WHEN WORKING ON SEEDER FILLED WITH FERTILIZER OR TREATED SEED. FOLLOW MANUFACTURERS RECOMMENDED SAFETY PROCEDURES WHEN WORKING WITH FERTILIZERS OR TREATED SEEDS.

3.1 TRACTOR OPERATION

Be aware of tractor safety procedures when working an Airseeder.

Review-tractor manuals.

Secure hitch pin with a retainer and lock drawbar in centre position.

3.2 GENERAL OPERATION

USE EXTREME CARE when cleaning, filling or making adjustments.

ALWAYS READ fertilizer or treated seed labels carefully and always keep label warnings in mind.

ALWAYS use adequate breathing equipment.

KEEP all shields in place, replace them if removed for service work.

ALWAYS lock auger attachment in raised position.

KEEP hands clear of tank opening when closing lid. Keep lid seal clean to ensure proper sealing.

DO NOT RIDE! No one should be allowed to ride on the Airseeder when in motion.

No one but the operator in the driver's compartment!

Check behind when backing up.

Reduce speed when working in hilly terrain.

Never allow anyone within the immediate area when working.



CAUTION! DO NOT SEARCH FOR HIGH PRESSURE HYDRAULIC LEAKS WITHOUT HAND OR FACE PROTECTION. A TINY, ALMOST INVISIBLE LEAK CAN PENETRATE THE SKIN WHICH WILL REQUIRE IMMEDIATE MEDICAL ATTENTION. USE CARDBOARD OR WOOD TO DETECT LEAKS - NEVER USE YOUR HANDS.

3.3 TRANSPORTING OPERATION



CAUTION! When transporting be aware of length, height and width. Make turns carefully and be aware of obstacles and overhead electrical lines.

When transporting machine, adhere to recommended safe speeds.

Do not transport in poor visibility. Install wing locks on tillage implement (for proper transport information of tillage implement refer to its respective operator's manual).

A slow moving vehicle (SMV) emblem and safety reflectors must be secured on the machine for safe transport.

Install Castor Wheel Lock pins.

Avoid soft surfaces.

3.4 MAINTENANCE



CAUTION! TRACTOR ENGINE SHOULD BE STOPPED AND WHEELS BLOCKED TO PREVENT ANY MOVEMENT DURING SERVICING.

ALWAYS WEAR SAFETY GOGGLES, BREATHING APPARATUS AND GLOVES WHEN WORKING ON SEEDER FILLED WITH FERTILIZER OR TREATED SEED.

DO NOT FEED ANY TREATED SEED TO LIVESTOCK OR HAUL SEED TO ELEVATOR. TREATED SEED IS POISONOUS AND MAY CAUSE HARM TO PERSONS OR LIVESTOCK.

ALWAYS MAKE SURE THAT PRESSURE IS RELIEVED FROM HYDRAULIC CIRCUITS BEFORE SERVICING OR DISCONNECTING FROM TRACTOR. FAILURE TO DO SO MAY RESULT IN HYDRAULIC FLUID BEING INJECTED INTO THE SKIN WHICH MAY RESULT IN GANGERINE.

TO PREVENT PERSONAL INJURY, DO NOT WALK WITHIN RADIUS OF RAISED CULTIVATOR WINGS. ALWAYS ENSURE WING RESTS ARE LOCKED AND IN PLACE.

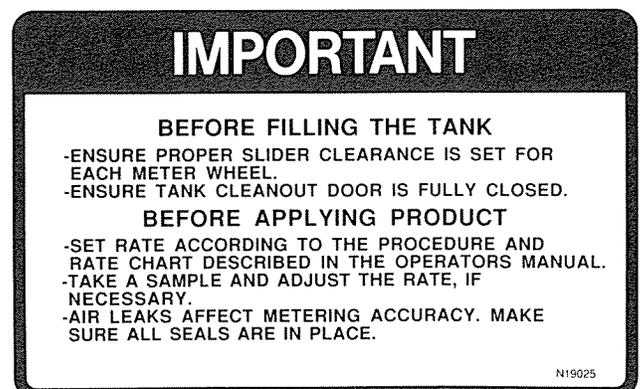


WARNING! ENGINE AND EXHAUST BECOME EXTREMELY HOT FROM OPERATION. CARE MUST BE TAKEN WHEN WORKING AROUND ENGINE TO PREVENT PERSONAL INJURY.



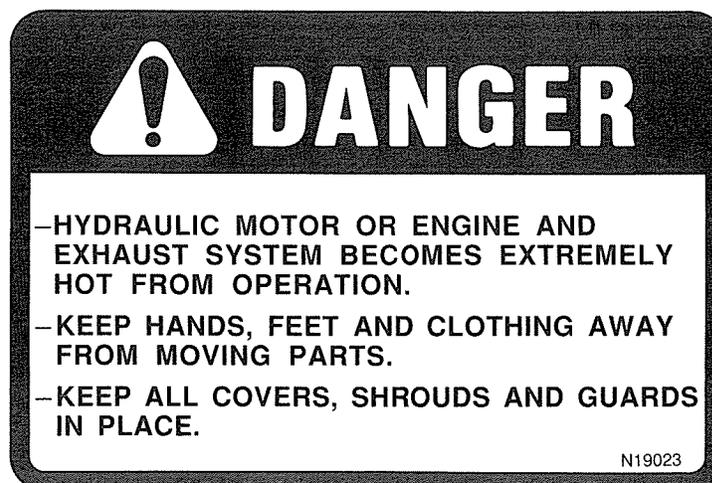
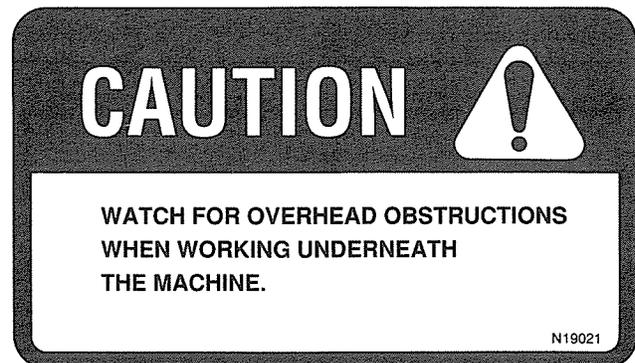
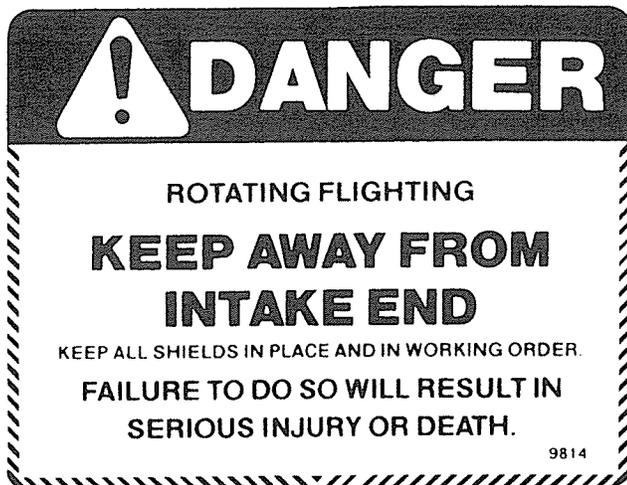
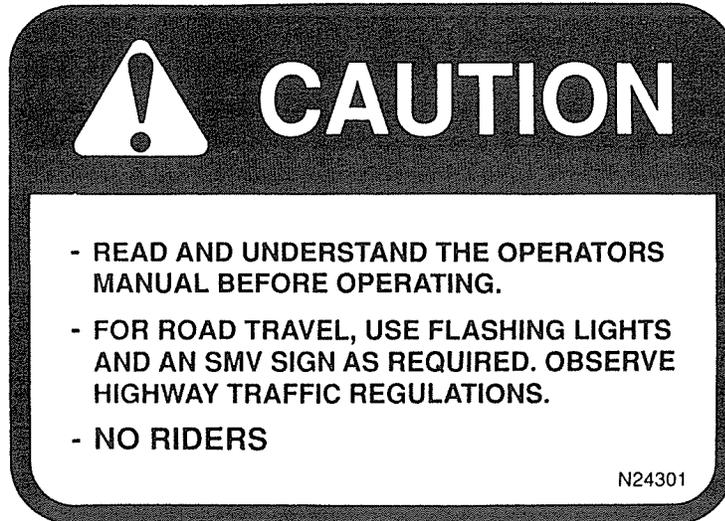
CAUTION! CARE SHOULD BE TAKEN WHEN WORKING NEAR THE AIRSEEDER WHILE THE FAN IS RUNNING. PRODUCT BLOWING OUT OF THE SYSTEM COULD CAUSE PERSONAL INJURY.

3.5 SAFETY DECALS



Safety

3.5 SAFETY DECALS (Continued)



3.5 SAFETY DECALS (Continued)

IMPORTANT

- MAKE SURE FAN INLET SCREEN IS KEPT CLEAN.
 - CHECK THAT ALL ROTATING PARTS ROTATE FREELY.
 - IF FAN VIBRATES EXCESSIVELY WHILE OPERATING, CHECK FOR:
 - A) DIRT OR DEBRIS BUILD UP ON BLADES
 - B) DAMAGED ROTOR.
- REFER TO OPERATORS MANUAL FOR MORE DETAILS.

N19026

WARNING

DO NOT ALLOW ANYONE TO RIDE OR CLIMB ON MACHINE WHEN WORKING OR TRANSPORTING

PART No. D13705

CAUTION

DO NOT OPEN LIDS WHEN FAN IS OPERATING.

N15094

WARNING

INSURE THAT LID MECHANISM IS SECURELY LOCKED IN THE OPEN POSITION PRIOR TO ENTERING THE TANK. FAILURE TO DO SO COULD RESULT IN LID ACCIDENTALLY CLOSING AND LOCKING IN THE CLOSED POSTION.

N25676

CAUTION

- AUGER TRANSPORT LOCK PIN MUST BE IN PLACE WHEN AIRSEEDER IS IN MOTION.
- USE CAUTION WHEN RELEASING AUGER CRADLE LEVER.

N19020

IMPORTANT

WHEN THE MACHINES ARE BEING TOWED BY A SEMI TRACTOR OR TRUCKS OF ANY DESCRIPTION THE UNITS MUST BE TOWED SEPARATELY FROM THE SEEDING TOOL WITH THE TOW HITCH PROVIDED!

N25674

CAUTION

- AUGER TRANSPORT LOCK PIN MUST BE IN PLACE WHEN AIRSEEDER IS IN MOTION.
- USE CAUTION WHEN RELEASING AUGER CRADLE LEVER.

N19020

4 Operation

4.1 TRANSPORTING THE 6000 SERIES AIRSEEDER

DISCONNECT MAIN DRIVE CHAIN

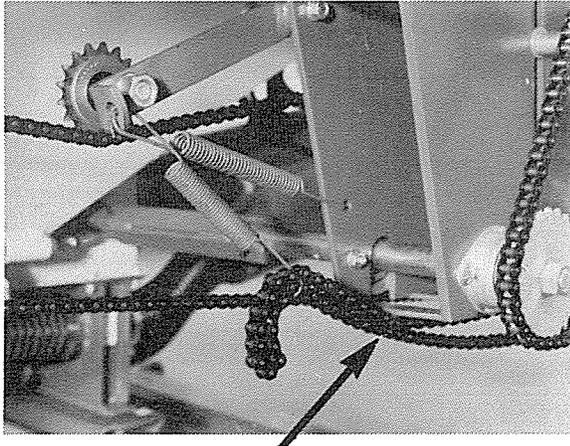


Figure 8
Main Drive Chain

Remove spring from the bottom idler. Remove chain from the jackshaft. Put end of spring through the chain and hook other end of spring to the top idler as shown in Fig. 8.

6130 & 6180 ONLY

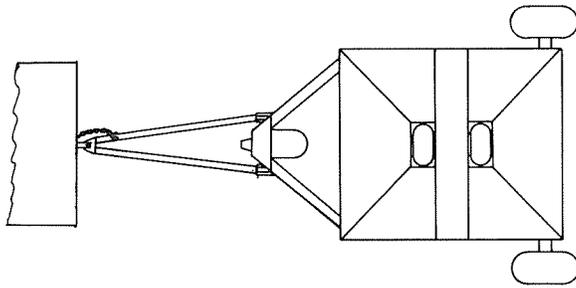


Figure 9
Towed Behind Vehicle (Truck/Tractor)

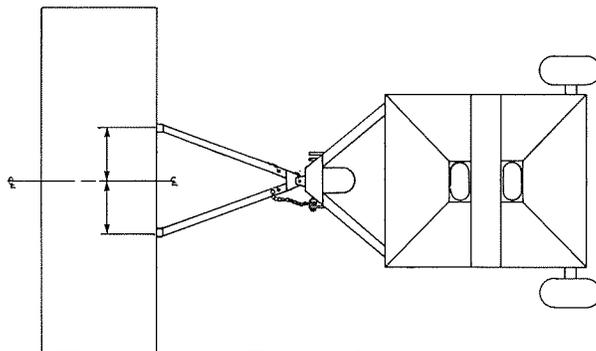


Figure 10
Towed Behind A Chisel Plow



IMPORTANT

**DO NOT
EXCEED
20 M.P.H.**

The front castor tire will contact the mud scraper if towing speeds exceed 20 M.P.H. causing severe damage to the tire and mud scraper.

4.1 TRANSPORTING THE 6000 SERIES AIRSEEDER



CAUTION!

ONLY TOW AT SAFE SPEEDS. IMPLEMENT TIRE MANUFACTURERS RECOMMEND A MAX. OF 20 M.P.H. GROSS VEHICLE WEIGHT MUST EXCEED 5000 G.V.W. lbs.

TURN ON HAZARD LIGHTS EXCEPT WHERE PROHIBITED BY LAW.

LOCK CASTOR WHEEL ON THE AIRSEEDER.

ALWAYS CONNECT THE SAFETY CHAIN PROVIDED TO THE TOWING VEHICLE AND THE HITCH OF THE AIRSEEDER. (See Fig. 9)

ENSURE DRAW PIN IS THE CORRECT SIZE AND A HAIRPIN IS INSTALLED TO PREVENT DISCONNECTION.

ENSURE SMV SIGN IS CONNECTED TO THE REAR OF THE SEEDER IN FULL VIEW OF PASSING TRAFFIC.

NOTE: IF TOWING A CULTIVATOR WITH THE AIRSEEDER THE TOWING VEHICLE MUST HAVE A G.V.W. EQUAL TO/OR GREATER THAN THE COMBINED WEIGHT OF THE SEEDER AND CULTIVATOR. (See Fig. 10).

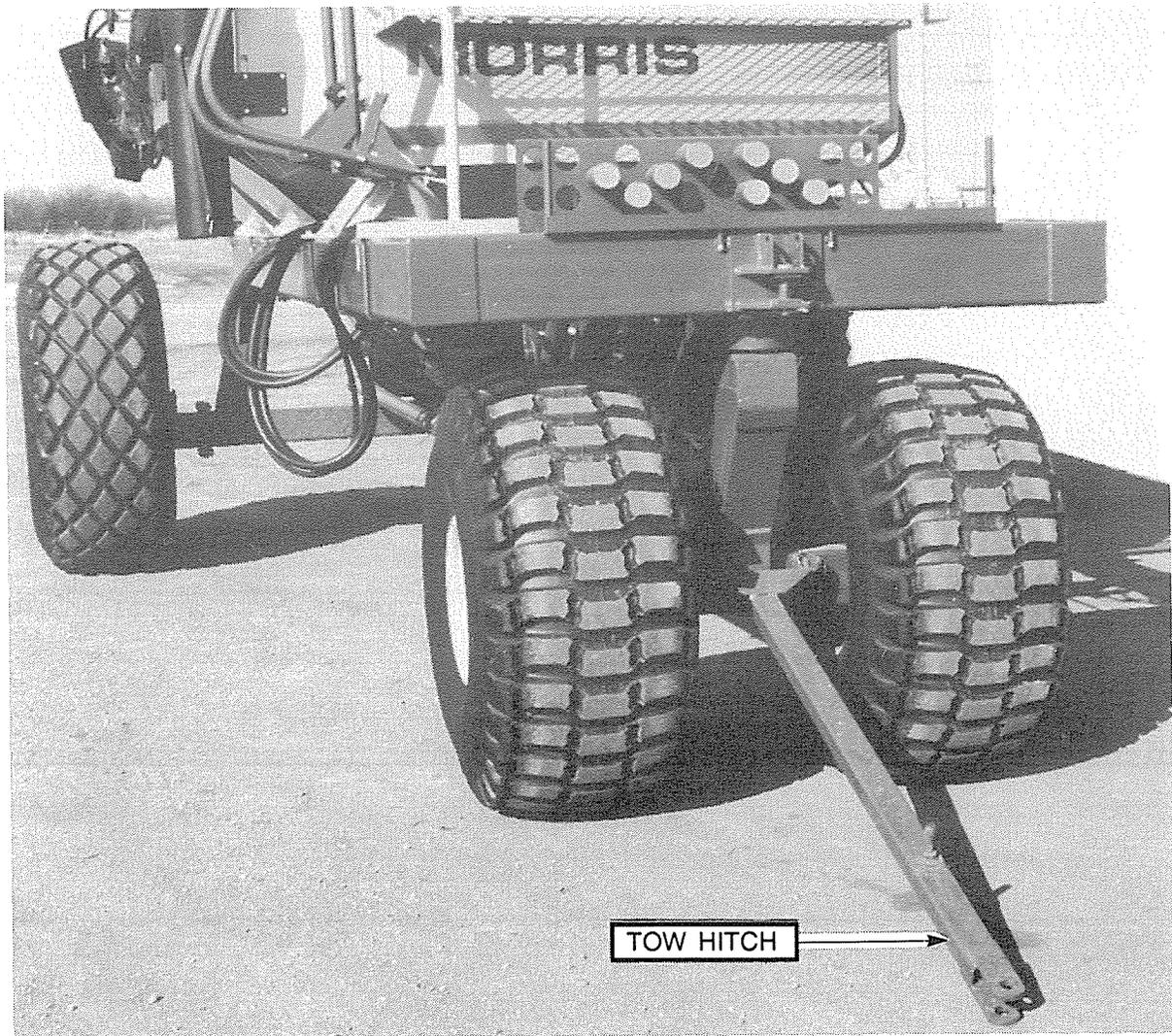
Operation

4.1.1 TRANSPORTING THE 6240 & 6300 SERIES AIRSEEDER



IMPORTANT

When the machines are being towed by a semi tractor or trucks of any description, the units **HAVE** to be towed separately from seeding tool with tow hitch provided.



- Attach tow hitch to front axle with two - 1" x 2 1/4" pins. Retain the pins with klik-pins.
- Use tow hitch when travelling without seeding tool.
- **Do Not** use transport hitch with material in tank.

4.2 TRANSPORTING WHEN USING A TRACTOR



CAUTION!

ONLY TOW AT SAFE SPEED.

ALWAYS ENSURE THE SAFETY CHAINS PROVIDED ARE CONNECTED CORRECTLY
LOCK CASTOR WHEEL ON THE AIRSEEDER.

Ensure that a S.M.V. sign is connected to the rear of the seeder in full view of passing traffic.

DO NOT transport with the fan running.

DO NOT transport with clutches engaged.

REDUCE SPEED with material in tank. DO NOT exceed a speed of 10 m.p.h.

4.3 CONNECTING THE AIRSEEDER TO THE CULTIVATOR



CAUTION!

ALWAYS ENSURE THAT PRESSURE IS RELIEVED FROM ALL HYDRAULIC CIRCUITS BEFORE SERVICING.

Ensure swinging drawbar is locked in the centre position.

Connect cultivator to the tractor. See cultivator manual for correct procedure.

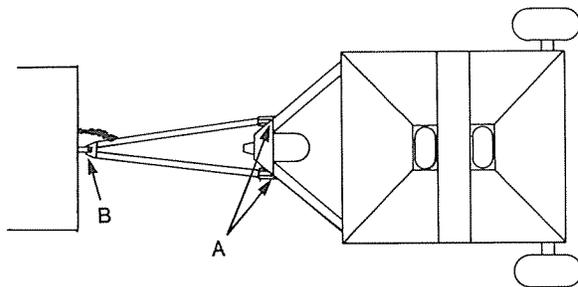


Figure 11

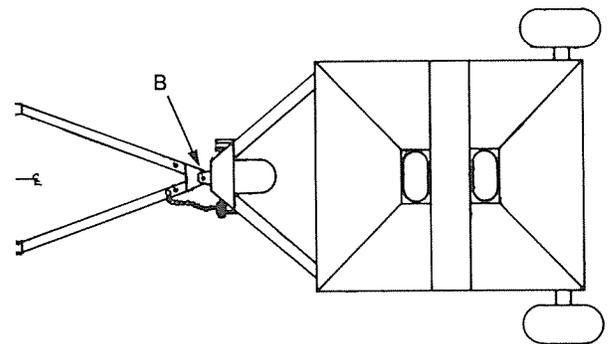


Figure 12

- Disconnect the Airseeder from the truck (tractor by removing pins A & B (See Fig. 11)) and unlock castor wheel. Remove tow hitch on 6240 & 6300.
- Turn hitch around into field position. (See Fig. 12)
- Separate the Hitch Poles by removing pin D (See Fig. 13)

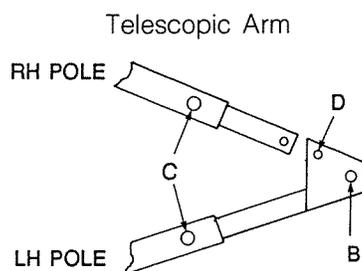


Figure 13

PIN SIZE

A - 1 1/8" x 3 11/16" Lg.

B - 1 1/4" x 3 7/8" Lg.

C - 1" x 5 13/32" Lg.

D - 1" x 3 3/4" Lg.

Operation

4.3 CONNECTING THE AIRSEEDER TO THE CULTIVATOR (Continued)

- (d) Mount the L. H. Hitch Pole to the L.H.S. of the cultivator and the R.H. Hitch Pole to the R.H.S. of the cultivator. (See Fig. 14).

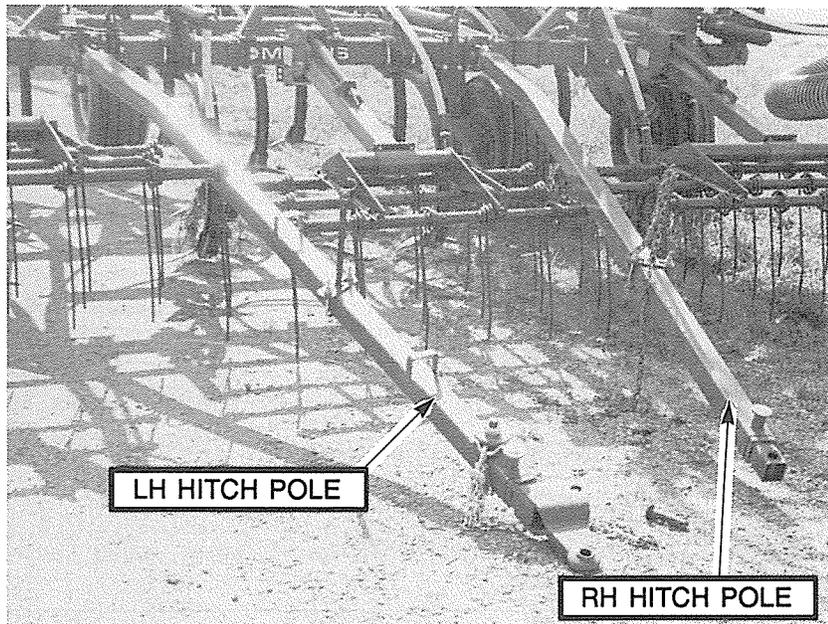


Figure 14

- (e) Put Mounted Harrows into transport position and place Hitch Poles on the harrows. This supports the hitch while backing up.



CAUTION! CHECK BEHIND WHEN BACKING UP.

- (f) Back up the cultivator to the Airseeder within 3 ft. of the **unextended** Hitch Pole.
(g) Remove Pin C from the L.H. Hitch Pole. Extend the L.H. Hitch Pole and connect it to the airseeder using the 1 1/4" x 3 7/8" lg. Pin. (See Fig. 15).

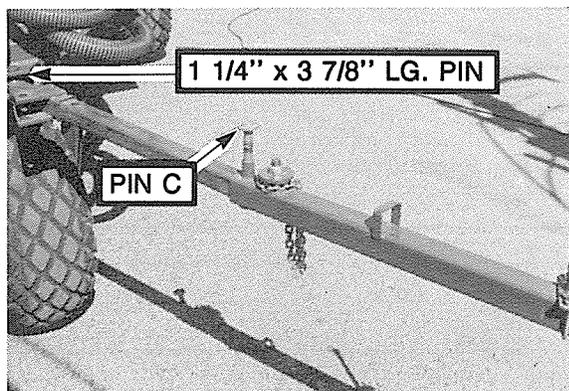


Figure 15

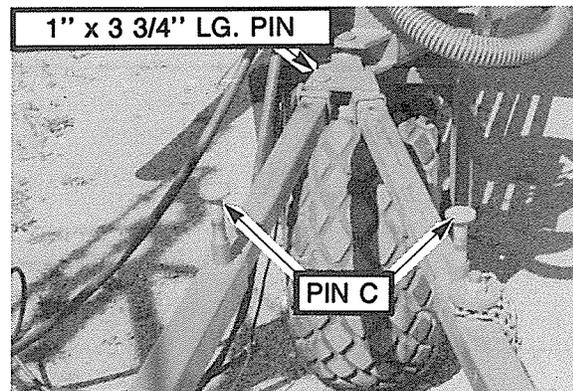
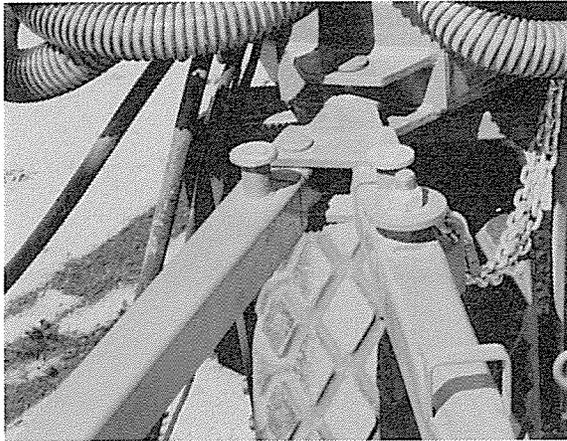


Figure 16

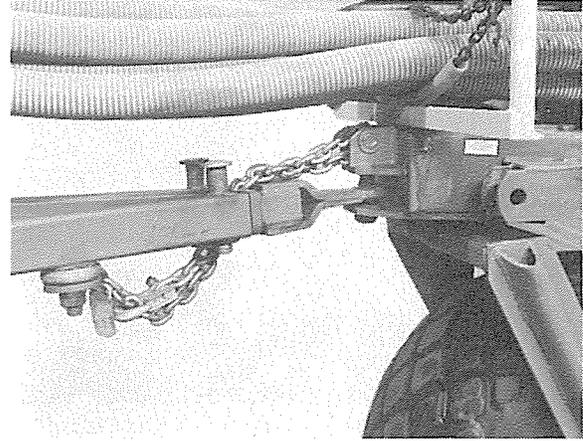
- (h) Remove Pin C from the R.H. Hitch Pole and extend it to connect with the L.H. Hitch Pole. Join Hitch Poles together using Pin D 1" x 3 3/4" lg. (See Fig. 16).

4.3 CONNECTING THE AIRSEEDER TO THE CULTIVATOR (Continued)

- (i) Block the tires of the Airseeder and insert Pins C into their bushings. (See Fig. 16)
- (j) Back up the cultivator until the Pins C drop through the Hitch tube and lock the Hitch Poles. Install the Click Pins. (See Fig. 17).



Hitch Poles Closed
Figure 17



Safety Chain
Figure 18

- (k) Connect the Safety Chain as shown. (See Fig. 18).
- (l) Run Clutch and Monitor wires through the loops along the L.H. Hitch Pole. (See Fig. 19).

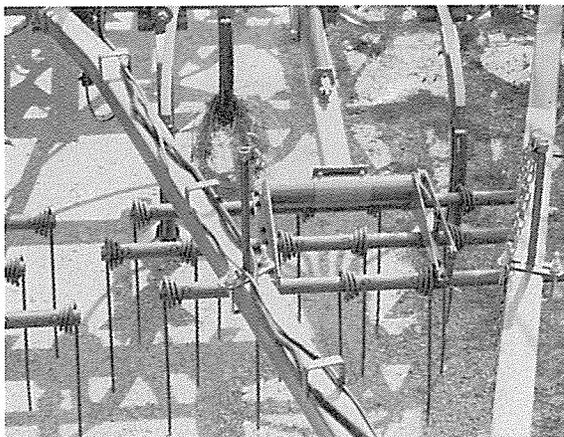


Figure 19

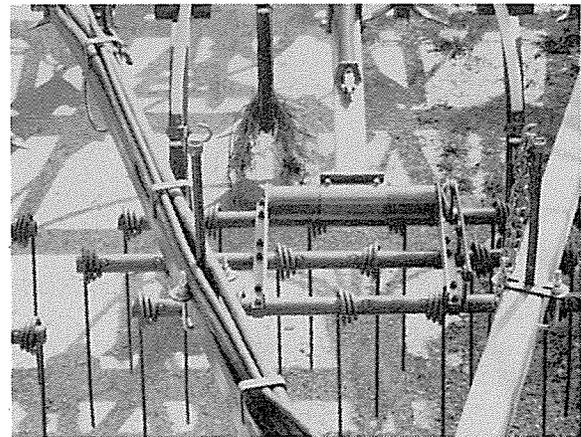


Figure 20

- (m) Run the Hydraulic lines (if any) along the L.H. Hitch Pole. (See Fig. 20).

Operation

4.3 CONNECTING THE AIRSEEDER TO THE CULTIVATOR (Continued)

- (n) Connect the Primary Couplers. (See Fig. 21).
- (o) Loop chain around the primary hoses with the secondary hose over the bottom half of the chain. See Fig. 22.

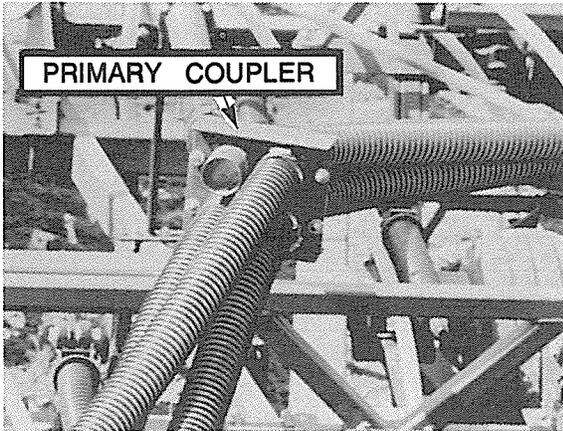


Figure 21

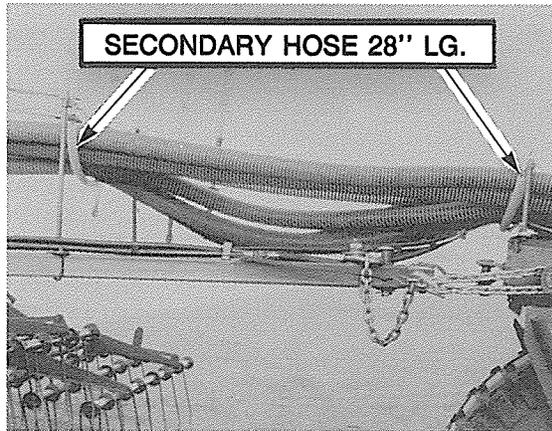


Figure 22

Rear Of Cultivator Shown Hyd. Drive

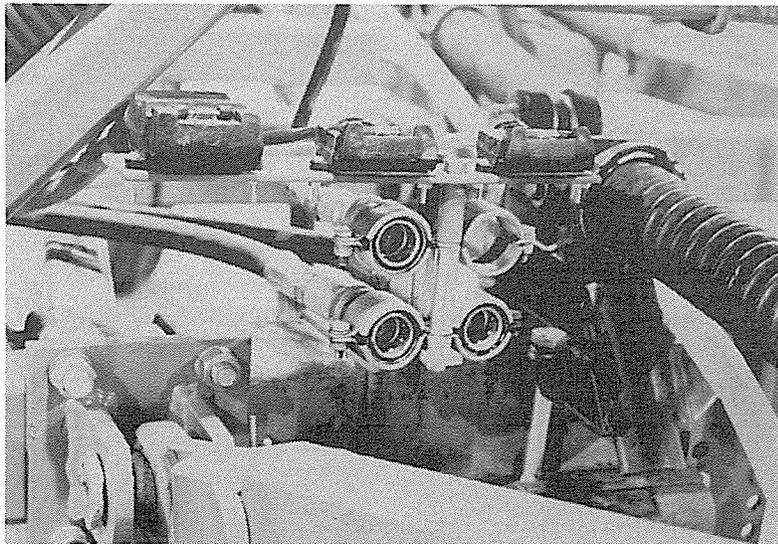


Figure 23

- (p) Connect the Monitor and Clutch Quick connectors at both the tractor/cultivator and the cultivator/airseeder connections. See Fig. 23.
- (q) **If Hydraulic Fan Drive**, then connect the Fan Hydraulic quick couplers at the tractor/cultivator and the cultivator/airseeder connections. Ensure couplers are clean and dirt free. See Section 4.4 for more detail on Hydraulic Fan Drive Operation.
- (r) **If Engine Fan Drive**, then connect the Auger quick couplers, if the unit is so equipped, at both the tractor/cultivator and the cultivator/airseeder connections.

4.3.1 DISCONNECTING AIRSEEDER FROM CULTIVATOR

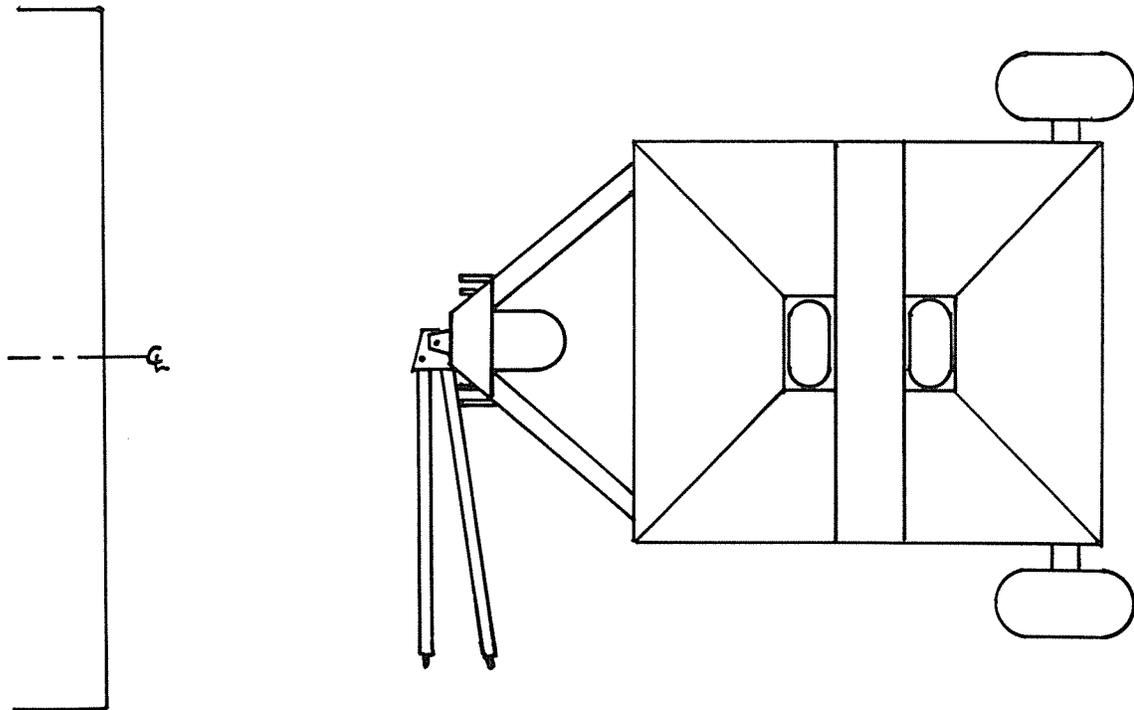


Figure 24

Disconnect primary hoses.

Disconnect hydraulic hoses and wires.

NOTE: HOSES OR WIRES do not have to be pulled through Loops.

Disconnect poles from cultivator and swing poles to one side onto the ground.

NOTE: DO NOT unhook poles from Airseeder.

4.3.2 RECONNECTING AIRSEEDER TO CULTIVATOR

(a) Split hitch poles. (See Fig. 13, Page 4.2).



CAUTION!

(b) Back cultivator to within 3 ft of Hitch Poles.

(c) Remove Pin C. (See Fig. 13). Connect L.H. Pole to the cultivator.

(d) Connect R.H. Pole to the cultivator, then follow steps (h) through to (r) in Section 4.3

Operation

4.4 HYDRAULIC FAN DRIVE

We recommend that this system be used on closed and/or closed centre load sensing hydraulic systems.

NOTE: Load sensing hydraulic systems may require "warming up" before they function smoothly. Just run at full speed to warm up the systems.

Maximum flow required is 13 U.S. g.p.m. minimum pressure of 2000 p.s.i. However smaller flows can be used depending on the product being metered. See Page 4.17 for Fan Speed guidelines.

For correct operation of the fan the hydraulic motor must be coupled to the priority valve (if the tractor is so equipped) in the hydraulic valve bank.

Check with the tractor manual or manufacturer to determine if or which spool is a "priority valve".

Speed fluctuations will result if the fan is not connected to the priority valve if hydraulic system is equipped with a priority valve.

Ensure couplers are free of dirt and are clean when connecting the Fan hydraulics to the tractor. The Fan has a one way check valve that only allows oil to flow in one direction. It may be necessary to move the hydraulic hoses to obtain the correct operation. The Fan also has a 3/8" dia. drain line. This line **MUST BE CONNECTED DIRECTLY INTO THE TRACTOR HYDRAULIC RESERVOIR TO ENSURE THAT THERE IS ZERO BACK PRESSURE IN THE DRAINLINE. IF NOT DAMAGE WILL RESULT TO THE MOTOR.**



CAUTION!

DO NOT SEARCH FOR HIGH PRESSURE HYDRAULIC LEAKS WITHOUT HAND OR FACE PROTECTION. A TINY, ALMOST INVISIBLE LEAK CAN PENETRATE THE SKIN WHICH WILL REQUIRE IMMEDIATE MEDICAL ATTENTION. USE CARDBOARD OR WOOD TO DETECT LEAKS - NEVER USE YOUR HANDS.

4.5 INSTALLATION OF MAIN DRIVE CHAIN



Drive Chain In Field Working Position

To install main Drive Chain.

- Unhook idler spring.
- Position chain on the jack shaft and idler sprockets. (See Fig. 25).
- Connect idler spring to transmission brace with idlers as shown in Fig. 25.

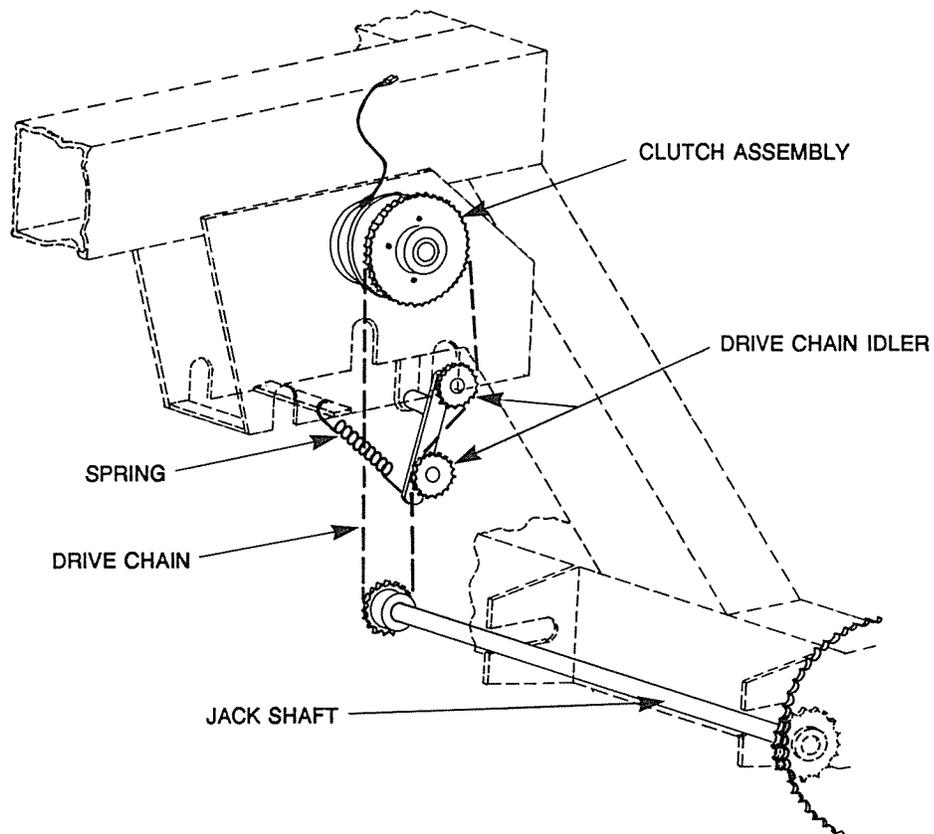
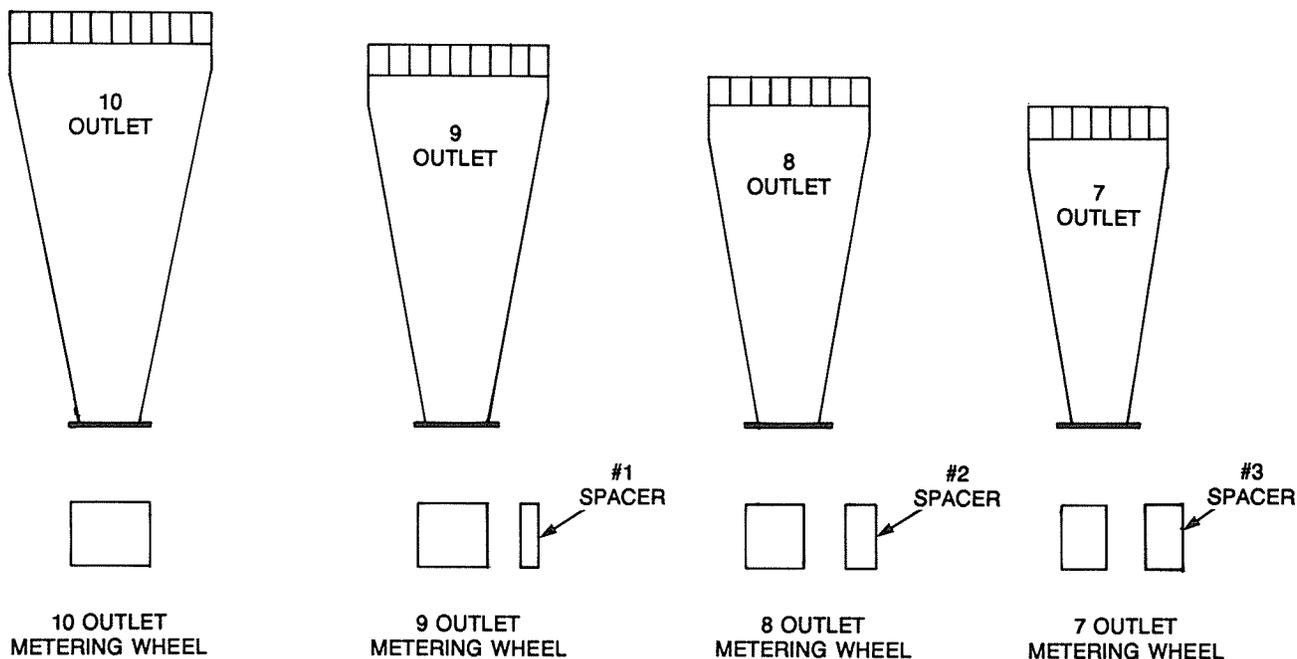


Figure 25

Operation

4.6 METERING SYSTEM

Secondary Divider Head



The 6000 Series Airseeder uses a combination of metering wheels and spacers shown above. The metering wheel is individually sized to correspond to the number of outlets at the connected secondary head and the spacers make up the space between the wheel and the body. Some openings may be blanked off depending on the number of secondary divider heads used on the cultivator. (See Section 7.6).

The 6000 Series Airseeder can meter all types of seeds and fertilizers by simply adjusting the slider plates.

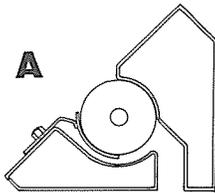
The slider plate setting for different products is summarized in Section 4.6.1. A special gauge is used for the intermediate setting and is supplied with each machine. (See Section 4.6.1). Different rates are easily obtained using the selection of quick change sprockets that attach to either of the two meter transmissions.

NOTE: BEFORE PUTTING PRODUCT IN THE TANKS ENSURE THAT:

- (a) THE SLIDER PLATES ARE SET CORRECTLY FOR PRODUCT BEING APPLIED. (See Section 4.6.1).
- (b) THE CLEANOUT DOORS ARE FULLY CLOSED AND SEALED.
- (c) THE PLASTIC BAG COVERING THE FAN IS REMOVED. (See Section 5.9).

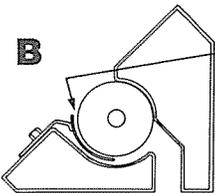
4.6.1 SLIDER SETTING

Locate slider as indicated and tighten nut to hold slider tightly in place.



A

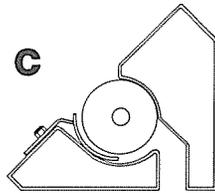
FINE SEEDS



B

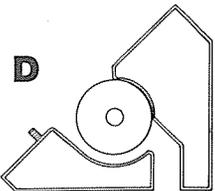
SEED GAUGE CLEARANCE

COARSE SEEDS



C

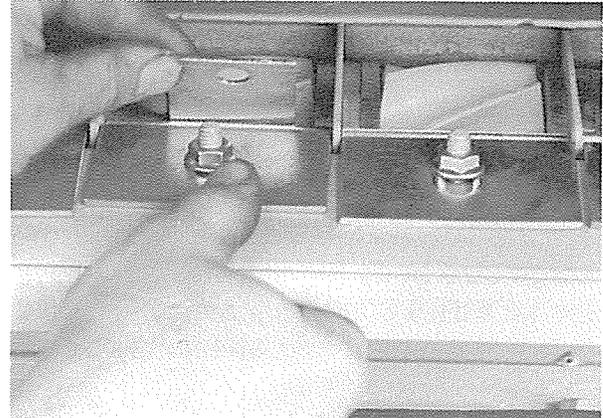
COARSE FERTILIZERS
(11-51-0)



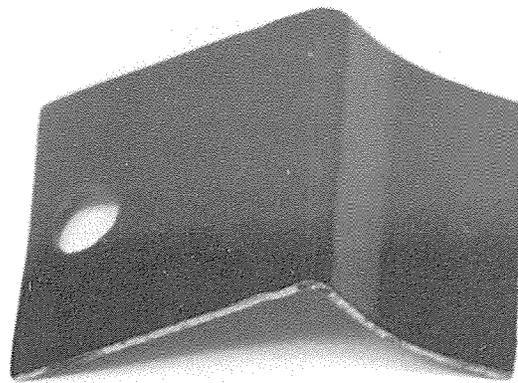
D

**LARGE SEEDS &
FERTILIZERS
CONTAINING
SULPHUR AND/OR
POTASH**

See Page 4.10.1
for more details.



Setting For Coarse Seed



Seed Gauge

SLIDER SETTING CHART

FINE SEEDS (A)	Canola Mustard Flax	Slider pushed up against wheels
FINE FERTILIZERS COARSE SEEDS (B)	Oats Barley Wheat Fine Fertilizers	Slider pushed up against seed gauge. (.075 gap).
COARSE FERTILIZERS (C)	Coarse Fertilizers (11-51-0)	Slider opened completely.
LARGE SEEDS SULPHUR/POTASH FERTILIZERS (D)	Peas Beans Fertilizers containing Sulphur and/or Potash	Slider removed completely. See Page 4.10.1 for more details. NOTE: Fertilizer Rates will be higher than shown on rate chart. Calibrating must be done to confirm rates.

Operation

4.6.1 SLIDER SETTING (Continued)

Reference: Large size peas (e.g.. Marafat & Radley)

Large size peas (eg.Marafat & Radley) can jam on the metering wheel spacer on the MORRIS 6000 Series Air Seeder. When the large peas jam on the spacer the flutes of the metering wheel may be damaged.

To prevent the peas from jamming, special slider plates are available, which closes the space on the spacer.

The slider plates can be purchased under the part numbers listed below.

Meter Wheel Size	Slider Part Number
7 Outlet	N27527
8 Outlet	N27528
9 Outlet	N27529
10 Outlet	N27530

NOTE: The special slider plates are for use with large seeds only. Use the standard slider plates for all other seeds and fertilizer.

Warranty Void if the special slider plates are not used when seeding large peas and damage occurs to the Spiral Fluted Metering Wheels.

Operation

4.7 FILLING TANK



The Morris 600 Series Airseeder is equipped with 2 tanks. The front tank is for seed and the rear tank is for fertilizer. However, BOTH tanks can be used for the same product.

The capacity of the Airseeder tanks are as follows:

- 6130 is a total of 130 bu (167 cu/ft.) or 65 bu (83.5 cu/ft.) per tank.
- 6180 is a total of 180 bu (231 cu/ft.) or 90 bu (115 cu/ft.) per tank.
- 6240 is a total of 240 bu (308 cu/ft.) or 120 bu (154 cu/ft.) per tank.
- 6300 is a total of 300 bu (385 cu/ft.) or 150 bu (192.5 cu/ft.) per tank.

NOTE: Before putting product in the tanks ensure that the cleanout doors are closed and sealed. Check that slider plates are set correctly for product being metered.

NOTE: Even small fertilizer lumps can cause problems with plugging. All possible precautions should be taken to prevent lumpy fertilizer from getting into the machine.

Open lid fully on tank being filled. The rear bolt to the lid linkage should hook on the Spring Latch (see Section 5.14).

Remove the screen, check the tank for debris, replace the screen.

4.7 FILLING TANK (Continued)



WARNING!

Do not enter tank unless another person is present.

Ensure that all auger and tank screens are in place.

Always use screen to filter when filling.

Remove the plastic bag covering fan.

Once tank is filled, clean lid seal and ensure lid seal is positioned correctly.

Ensure all auger and tank screens are in place.

NOTE: Before seeding it is recommended that after a rain or dew that fan be run momentarily (30 sec.) to get rid of moisture in the system.

Check lids for air leaks with your hands once airseeder fan is operational. Pull up on corner of lid if air escapes, tighten lid latch. (See Section 5.8).

Check metering body for air leaks.



WARNING

While entry into the tank is **not** recommended, if an individual does enter the tank, another person must be present and the lid should be properly adjusted with the lid seal in place. The lid adjustment procedure is described in Section 5.7 of the Operator's Manual.

4.8 METERING RATE ADJUSTMENT

The metering rate adjustment for both tanks is done in the same manner. The rate varies with the speed of the metering wheels. A new rate is achieved by changing a sprocket on the Posi-Drive Transmission.

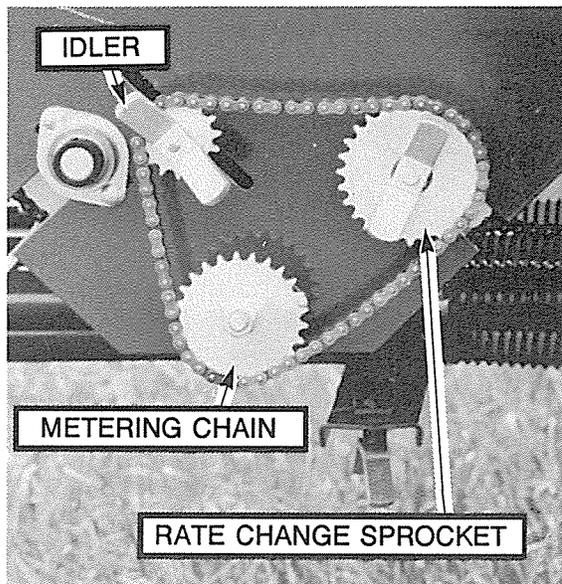


Figure 26 - Drive Transmission

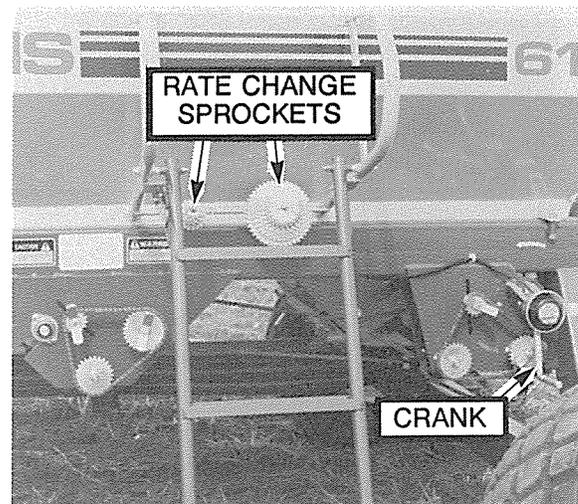


Figure 27

Refer to the rate charts Section 4.15 for desired application rate and sprocket selection.

NOTE: The Rate Charts should only be used as a guide. Even though actual product was used to determine the chart variation in seed size, density, shape, tire pressure and wheel sinkage are all factors that can influence the seed rate.

- (a) Loosen metering chain on posi-drive transmission, by loosening the idler. (See Figure 26 & 27).
- (b) Spin off wing nut and remove rate change sprocket.
- (c) Install desired rate change sprocket and tighten wing nut.
- (d) Tighten chain by adjusting idler.

NOTE: Do not overtighten chain, just take slack out of chain.

4.8.1 RATE CALIBRATION

The practice of doing a rate calibration is strongly recommended as it will confirm the **actual** amounts of product being put into the ground.

Operation

4.8.1 RATE CALIBRATION (Continued)

Checking the rate on the 6000 Series Airseeder is very simple.

The following procedure is one that should be followed for every rate calibration or change of product.

NOTE: The fan must not be running when a rate check is performed.

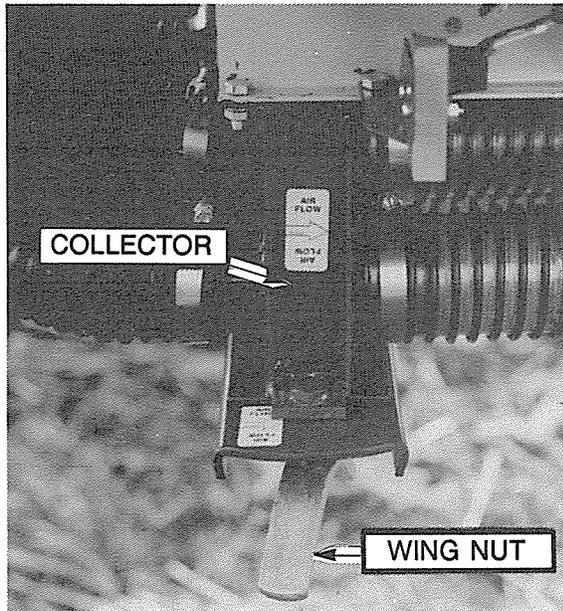


Figure 28 - Collector Bottom

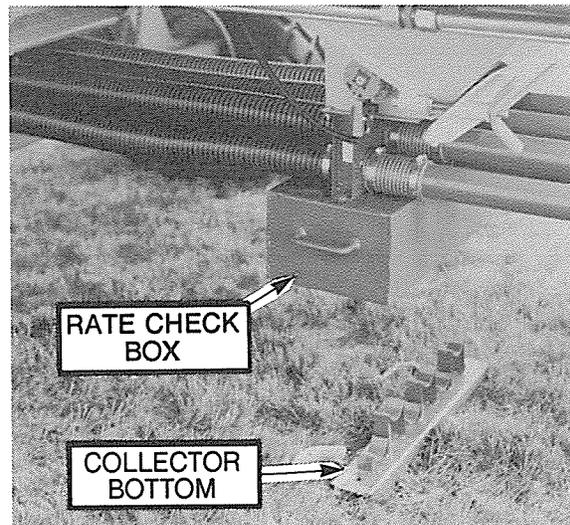


Figure 29 - Collector Bottom Removed

- (a) Refer to calibration chart for the correct number of turns of the crank. (Page 4.15).
- (b) Remove the Wing Nuts. (See Fig. 28).
- (c) Remove the bottom of the collector. (See Fig. 29).
- (d) Remove the metering chain from the transmission that is **not** being checked. (See Fig. 26).
- (e) Check that the desired rate change sprocket is installed in the transmission. (See rate charts and Fig. 26 & 27).
- (f) Turn the crank until material begins to fall through the collector body. (See Fig. 28).
- (g) Slide rate check box on to the collector body. (See Fig. 29).
- (h) Turn crank in direction of the arrow (counter clockwise) the required number of turns.

NOTE: Incorrect rates will occur if crank is rotated **Clockwise**.

- (i) Weigh the sample by using tarp straps to hook rate check box to spring scale. (See Fig. 30).

NOTE: Remember to subtract the weight of the rate check box from the total sample weight.

4.8.1 RATE CALIBRATION (Continued)

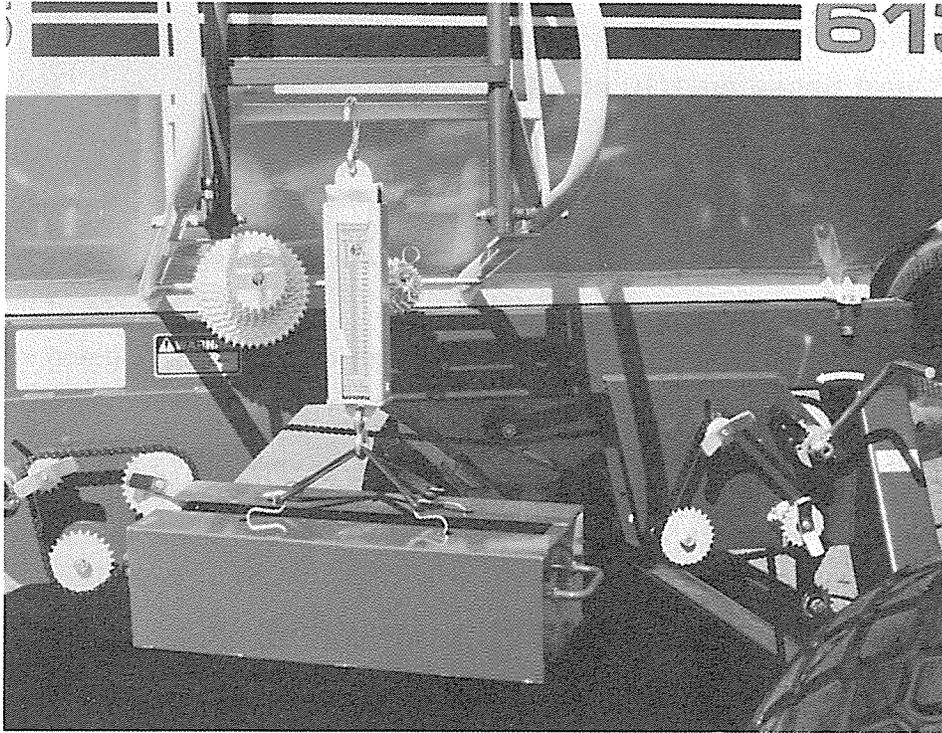


Figure 30

(j) Check this rate against rate required. If a different rate is required then increase or decrease the size of the rate change sprocket. Increasing the sprocket size will increase the rate and vice versa.

(k) Replace the bottom of the collector.

NOTE: Arrow directions on the collector **bottom** must point in the same direction as the ones on the collector **body**. (See Fig. 28). On newer models, the collector bottom can only be assembled one way.

(l) Check the rate of the other tank similarly.

NOTE: Remember to remove the metering chain from the first transmission.

(m) For 1/10 acre sample:

$$\text{Rate} = \text{lbs} / \text{acre} = \text{Sample Weight (lbs)} \times 10$$

For **Fine Seeds** it is recommended to take a larger sample. Typically to take a sample for 1/2 acre or 1 acre.

Example:

For 1/2 acre sample for a 25 ft. wide cultivator:

The number of crank turns required for a 1/2 acre is the number of turns required for 1/10 acre for a specific machine width x 5.

From the chart on page 4.15

Turns req. for 1/10 acre = 28.13

Turns req. for 1/2 acre = 28.13 x 5 = 140.65

Rate = lbs/acre = 1/2 acre sample wt. (lbs) x 2

Operation

4.8.1 RATE CALIBRATION (Continued)

6000 SERIES AIR SEEDER IMPERIAL RATE CALIBRATION

Calibration Chart based on 1/10 of a Acre.
See rear of book for Metric calibration chart.

W = Machine Width (Feet)

F = Optional Mechanical Acre Tally
Factor = 56/R

R = Crank Rotation - turns

for 1/10 Acre = 702.8/W for 6130

for 1/10 Acre = 619.5/W for 6180

for 1/10 Acre = 464.6/W for 6240 & 6300 with All Weather Tires.

for 1/10 Acre = 422.4/W for 6240 & 6300 with Rice Tires.

D = Distance required for 1/10 Acre (Feet) = 4356/W

6000 Series Air Seeder RATE CALIBRATION CHART																			
WIDTH [W] (ft)	AIRSEEDER MODEL								DISTANCE [D] (ft)	WIDTH [W] (ft)	AIRSEEDER MODEL								DISTANCE [D] (ft)
	6130		6180		6240/6300		6240/6300				6130		6180		6240/6300		6240/6300		
	[R]	[F]	[R]	[F]	[R]	[F]	[R] Rice	[F] Rice			[R]	[F]	[R]	[F]	[R]	[F]	[R] Rice	[F] Rice	
21	33.47	1.67	29.50	1.90	22.12	2.53	20.11	2.78	207.43	51	13.78	4.06	12.15	4.61	9.11	6.15	8.28	6.76	85.41
22	31.95	1.75	28.16	1.99	21.12	2.65	19.20	2.92	198.00	52	13.52	4.14	11.91	4.70	8.93	6.27	8.12	6.90	83.77
23	30.56	1.83	26.93	2.08	20.20	2.77	18.37	3.05	189.39	53	13.26	4.22	11.69	4.79	8.77	6.39	7.97	7.03	82.19
24	29.28	1.91	25.81	2.17	19.36	2.89	17.60	3.18	181.50	54	13.01	4.30	11.47	4.88	8.60	6.51	7.82	7.16	80.67
25	28.11	1.99	24.78	2.26	18.58	3.01	16.90	3.31	174.24	55	12.78	4.38	11.26	4.97	8.45	6.63	7.68	7.29	79.20
26	27.03	2.07	23.83	2.35	17.87	3.13	16.25	3.45	167.54	56	12.55	4.46	11.06	5.06	8.30	6.75	7.54	7.43	77.79
27	26.03	2.15	22.94	2.44	17.21	3.25	15.64	3.58	161.33	57	12.33	4.54	10.87	5.15	8.15	6.87	7.41	7.56	76.42
28	25.10	2.23	22.13	2.53	16.59	3.38	15.09	3.71	155.57	58	12.12	4.62	10.68	5.24	8.01	6.99	7.28	7.69	75.10
29	24.23	2.31	21.36	2.62	16.02	3.50	14.57	3.84	150.21	59	11.91	4.70	10.50	5.33	7.87	7.12	7.16	7.82	73.83
30	23.43	2.39	20.65	2.71	15.49	3.62	14.08	3.98	145.20	60	11.71	4.78	10.33	5.42	7.74	7.24	7.04	7.95	72.60
31	22.67	2.47	19.98	2.80	14.99	3.74	13.63	4.11	140.52	61			10.16	5.51	7.62	7.35	6.92	8.09	71.41
32	21.96	2.55	19.36	2.89	14.52	3.86	13.20	4.24	136.13	62			9.99	5.61	7.49	7.48	6.81	8.22	70.26
33	21.30	2.63	18.77	2.98	14.08	3.98	12.80	4.38	132.00	63			9.83	5.70	7.37	7.60	6.70	8.36	69.14
34	20.67	2.71	18.22	3.07	13.66	4.10	12.42	4.51	128.12	64			9.68	5.79	7.26	7.71	6.60	8.48	68.06
35	20.08	2.79	17.70	3.16	13.27	4.22	12.07	4.64	124.46	65			9.53	5.88	7.15	7.83	6.50	8.62	67.02
36	19.52	2.87	17.21	3.25	12.91	4.34	11.73	4.77	121.00	66			9.39	5.96	7.04	7.95	6.40	8.75	66.00
37	18.99	2.95	16.74	3.35	12.56	4.46	11.42	4.90	117.73	67			9.25	6.05	6.93	8.08	6.30	8.89	65.01
38	18.49	3.03	16.30	3.44	12.23	4.58	11.12	5.04	114.63	68			9.11	6.15	6.83	8.20	6.21	9.02	64.06
39	18.02	3.11	15.88	3.53	11.91	4.70	10.83	5.17	111.69	69			8.98	6.24	6.73	8.32	6.12	9.15	63.13
40	17.57	3.19	15.49	3.62	11.62	4.82	10.56	5.30	108.90	70			8.85	6.33	6.64	8.43	6.03	9.29	62.23
41	17.14	3.27	15.11	3.71	11.33	4.94	10.30	5.44	106.24	71			8.73	6.41	6.54	8.56	5.95	9.41	61.35
42	16.73	3.35	14.75	3.80	11.06	5.06	10.06	5.57	103.71	72			8.60	6.51	6.45	8.68	5.87	9.54	60.50
43	16.34	3.43	14.41	3.89	10.80	5.19	9.82	5.70	101.30	73			8.49	6.60	6.36	8.81	5.79	9.67	59.67
44	15.97	3.51	14.08	3.98	10.56	5.30	9.60	5.83	99.00	74			8.37	6.69	6.28	8.92	5.71	9.81	58.86
45	15.62	3.59	13.77	4.07	10.32	5.43	9.39	5.96	96.80	75			8.26	6.78	6.19	9.05	5.63	9.95	58.08
46	15.28	3.66	13.47	4.16	10.10	5.54	9.18	6.10	94.70	76			8.15	6.87	6.11	9.17	5.56	10.07	57.32
47	14.95	3.75	13.18	4.25	9.89	5.66	8.99	6.23	92.68	77			8.05	6.96	6.03	9.29	5.49	10.20	56.57
48	14.64	3.83	12.91	4.34	9.68	5.79	8.80	6.36	90.75	78			7.94	7.05	5.96	9.40	5.42	10.33	55.85
49	14.34	3.91	12.64	4.43	9.48	5.91	8.62	6.50	88.90	79			7.84	7.14	5.88	9.52	5.35	10.47	55.14
50	14.06	3.98	12.39	4.52	9.29	6.03	8.45	6.63	87.12	80			7.74	7.24	5.81	9.64	5.28	10.61	54.45

4.9 ALTERNATIVE RATE CALIBRATION

An alternate rate calibration method takes into account wheel sinkage and variations in tire circumference.

1. See the Monitor Section on Page 4.30. Instead of turning the calibration crank, the metering drive clutch is engaged and the seeder is pulled through a distance that equals at least 1/10 of an acre.

NOTE: Fan should not be running for either rate check method.

4.10 SEEDING FINE SEEDS (CANOLA, MUSTARD, ETC.)

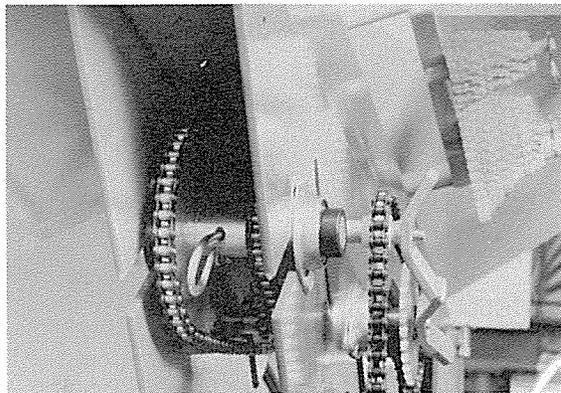
NOTE: Seed must be placed in the front tank.

When seeding fine seeds such as canola or mustard, the slow speed transmission has to be engaged to ensure the low rates required for these products.

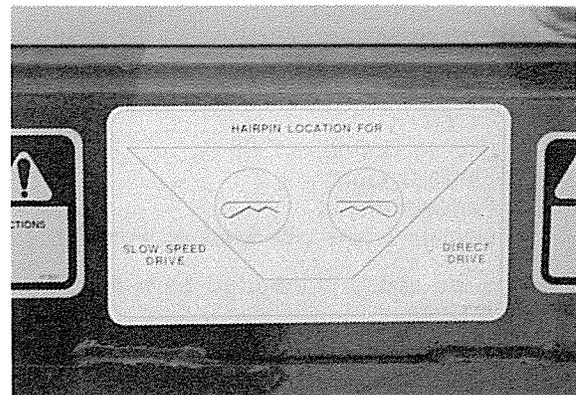
The slow speed transmission is incorporated in the **FRONT** Posi-Drive Transmission.

To engage the slow speed, remove the large hairpin from the rear shaft and install through the sleeve and shaft located at the front of the transmission.

NOTE: Shaft will have to be rotated to align holes for pin insertion.



Slow Speed Engaged



Direction of Pin

To disengage the slow speed, reverse the above procedure.

Rate checks can be performed the same way as for other seeds.

Usually it is necessary to reduce the fan r.p.m. when seeding fine seeds. See section 4.12 for specific fan speeds.

4.11 SEEDING LEGUMES (PEAS, BEANS, ETC.)

When inoculant is applied at the time of seeding, then once the Airseeder has been filled, the fill-lids should be left open and the fan run for 5 - 10 min. at full r.p.m. to dry the seed.

If the seed is not dried then the seed will have a tendency to bridge and not meter into the air stream.

Calibration must be done **after** the seed is dried otherwise the calibration will be incorrect.

Operation

4.12 FAN SPEEDS

Adequate air volume is necessary at all times to carry the product in the air stream. Air volume can be controlled by adjusting hydraulic oil flow (on hydraulic fan drives) or adjusting engine speed on engine fan drive models.

Air volume hence fan speed requirements will vary with:

- (a) Ground speed.
- (b) Metering rate.
- (c) Number of primary runs.
- (d) Width of machine.
- (e) Density and size of material.

Excessive fan speed can cause seed damage, seed bouncing and premature wear of the system.

NOTE: It is recommended that after a rain or dew the fan be run two to three minutes to expel any moisture in the system.

Generally fan speed is adequate if product flows through the hoses without surging and the hoses empty quickly and evenly when the system shuts down.

The Table below lists initial fan speeds for certain products. These should be used only as a guide. If plugging or surging occurs increase the fan speed to eliminate the problem.

SUGGESTED MINIMUM FAN RPM SETTINGS

Canola	3000 RPM	} Settings when applying product. NOTE: It is normal for fan speed to drop when not applying product.
Lentils	3800 RPM	
Coarse Grains	4000 RPM	
Fertilizer Light	4000 RPM	
Fertilizer Heavy	4500 RPM	
Coarse Grains with Medium Fertilizer	4500 RPM	

NOTE: If fan speed is adjusted be sure to adjust the monitor fan alarm setting accordingly. (See Section 4.19.4)

4.13 FAN SPEED SETTING - HYDRAULIC FAN DRIVE

The hydraulic motor used on the 6000 Series Air Seeders requires a load sensing or closed centre hydraulic system with flow control.

These systems provide only the necessary amount of oil to operate the fan at a specific speed.

THE HYDRAULIC MOTOR WILL ALSO WORK ON SOME OPEN CENTRE SYSTEMS, HOWEVER THE RESPECTIVE TRACTOR MANUFACTURER SHOULD BE CONSULTED BEFORE THE HYDRAULIC DRIVEN FAN IS INSTALLED.



IMPORTANT:

Run hydraulic fan drive at low R.P.M. (1000 - 2000) for 5 minutes before operating at set R.P.M. This is required to warm up the hydraulic fluid. Cold hydraulic fluid will cause pressure spikes in the system that will damage the case drain seal in the orbit motor.

4.13 FAN SPEEDS SETTING - HYDRAULIC FAN DRIVE (Continued)

Fan speed is adjusted by increasing or decreasing the amount of oil being delivered to the motor. This is done by adjusting the respective flow control valve until the desired R.P.M. is displayed on the monitor.

NOTE: There is a one-way check valve installed in the hydraulic circuit. If the fan does not rotate, then move hydraulic lever in the opposite direction; this will engage the fan. This valve prevents damage to the hydraulic systems when the fan is shut OFF, by allowing the fan to freewheel.

4.14 FAN SPEED SETTING - ENGINE DRIVEN FAN

The engine drives the fan through a set of belts and pulleys.

To increase or decrease the fan speed is a simple matter of increasing or decreasing the engine speed until desired fan speed is indicated on the monitor. So as not to overload the engine, the minimum fan speed is 3000 R.P.M.

NOTE: Maximum engine operation RPM is 3600 R.P.M. Do not adjust governor to increase engine speed above this set point.

4.15 RATE CHARTS

The Rate Chart applies to all spacings listed below:

Check that the correct spacing sprocket is installed on your machine. This sprocket is located on the clutch output shaft.

7.2" Spacing - 9 Teeth	8" Spacing - 10 Teeth
7.5" Spacing - 9 Teeth	9" Spacing - 11 Teeth
10" Spacing - 13 Teeth	12" Spacing - 15 Teeth

(Refer to Section 7.6)

The charts should only be used as a guide. Specific Rates can be achieved by using the rate check method as outlined in Section 4.8.1.

To determine a seed/fertilizer rate from the chart:

1. Go to the desired rate along the line marked "Standard" of a specific graph.
2. Go straight up from that point to where that line is intersected by the graph line of the particular product being metered.
3. At this intersection go straight across to the vertical line of the graph. This will give the sprocket size required to give the particular rate chosen.
4. Change the Quick Change Sprocket and repeat the rate check to confirm the seed rate.
5. Repeat the above procedure for the other tank.
6. For very low or very high rates, see Section 4.15.1 and 4.15.2

Operation

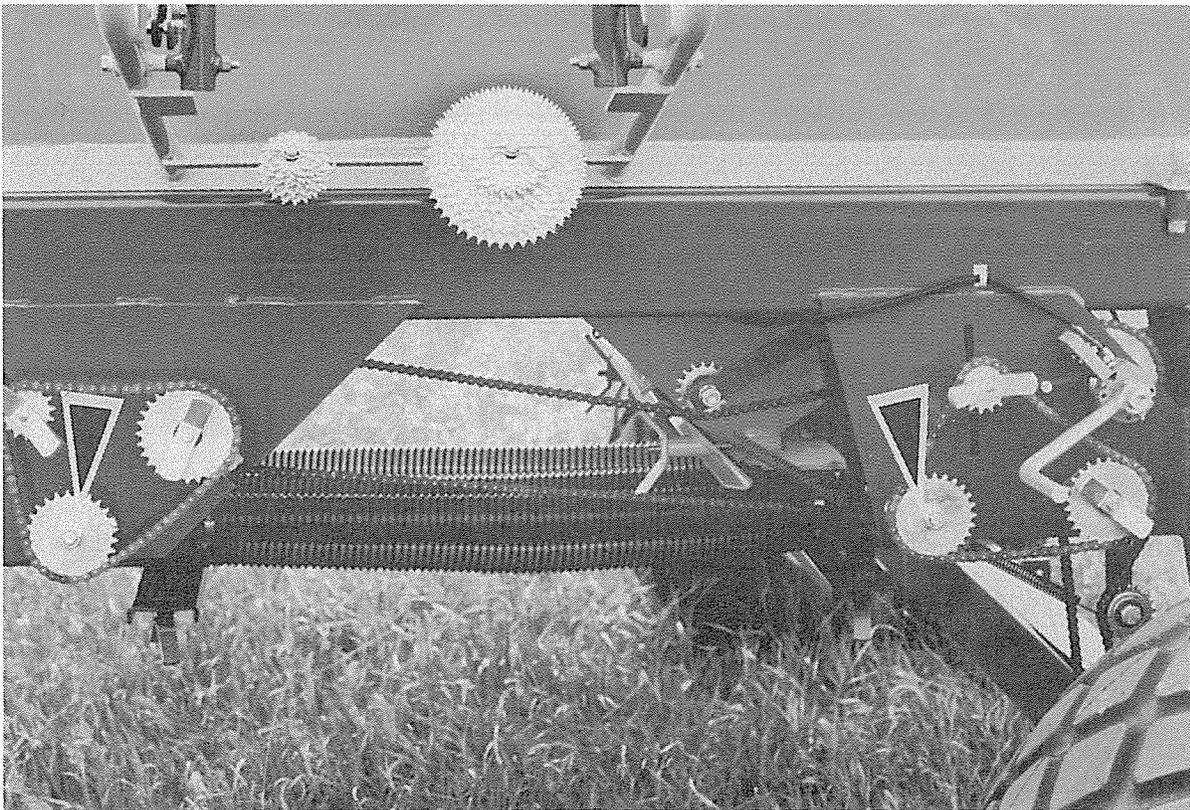
4.15 RATE CHARTS (Continued)

4.15.1 EXTRA LOW RATES

Although the charts show a minimum rate of 35 lbs./acre for fertilizer and 20 lbs./acre for seed, this is sometimes not low enough, especially when product is being metered from both tanks.

Rates under the values mentioned above can be achieved by replacing the standard 25 tooth sprocket on the front of the transmission with either a 35 or 40 tooth sprocket.

See below:



The rates obtained when using the 35 and 40 tooth sprocket are shown on the rate charts beside the respective size sprocket.

When both tanks are being used to meter the same product **without** the Banding Kit, then the 25 tooth sprocket on each transmission must be changed. Now both transmissions will have the same size **metershaft** sprocket. See above.

If the **Banding kit is installed**, then only the 25 tooth sprocket on the **rear** transmission needs to be changed.

The same metering chain can be used with these larger sprockets up to a certain size of quick change sprocket.

4.15.1 EXTRA LOW RATES (Continued)

See table below:

	Metershaft Sprocket Size	MAX Size of Quick Change Sprocket	MIN Size Of Quick Change Sprocket
STD.	25 Tooth	45 Tooth	11 Tooth
LOW RATE (1)	35 Tooth	33 Tooth	11 Tooth
LOW RATE (2)	40 Tooth	26 Tooth	11 Tooth
HIGH RATE	15 Tooth	45 Tooth	18 Tooth



IMPORTANT

Before filling tank set the sliders to their correct position for the product being metered.

INCORRECT RATES & DAMAGE TO THE SYSTEM COULD OCCUR IF THE SLIDERS ARE NOT SET CORRECTLY.

To determine a rate from the chart:

1. Go to the desired rate along the line next to the size of **metershaft** sprocket used.
2. Go straight up from that point to where that line is intersected by the graph line of the particular product being metered.
3. At this intersection go straight across to the vertical line of the graph. This will give the sprocket size required to give the particular rate chosen.
4. Change the Quick Change Sprocket and repeat the rate check to confirm the seed rate.
5. Repeat the above procedure for the other tank.

4.15.2 EXTRA HIGH RATES

In areas where higher rates of product are required the **metershaft** sprocket is changed from the standard 25 tooth to a 15 tooth. See table above.

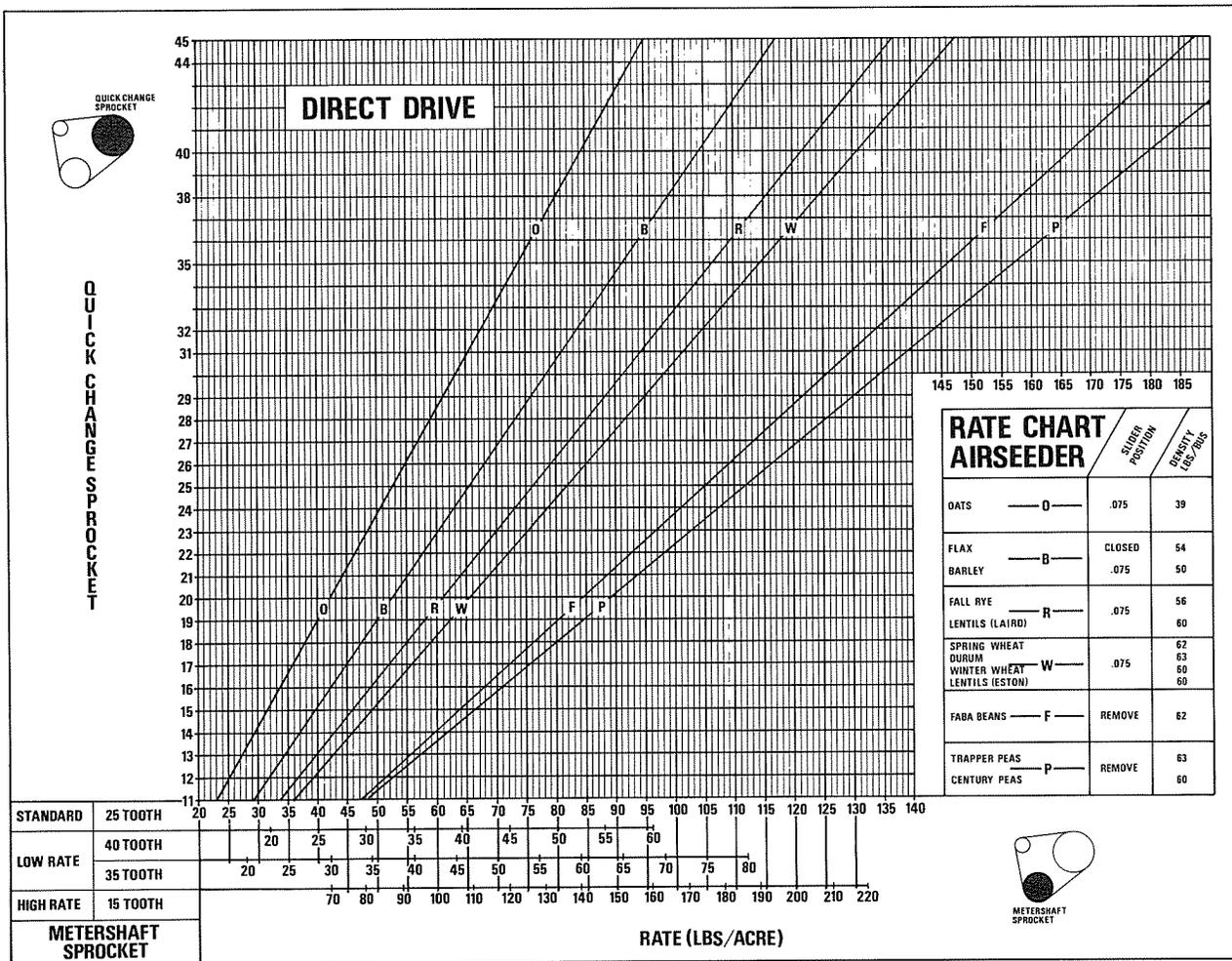
Use the same method as above to determine the required metering rate.

Operation

COARSE & LARGE SEED CHART

NOTE: The following Sprocket sizes are available, if required through the local **MORRIS** Dealer.

Size	Part #	Size	Part #
30 tooth	N19779	39 tooth	N19799
33 tooth	N19780	41 tooth	N19513
34 tooth	N19750	42 tooth	N19797
36 tooth	N19583	43 tooth	N19798
37 tooth	N19507		



NOTE: 1) RATE CHART APPLIES TO 8" 9" & 12" SPACINGS.
 2) CLUTCH OUTPUT SPROCKETS FOR 8" SPACING- 10 TOOTH
 9" SPACING- 11 TOOTH
 12" SPACING- 15 TOOTH
 3) THIS RATE CHART SHOULD ONLY BE TAKEN AS A GUIDE FOR FINDING THE APPROXIMATE SPROCKET. RATE WILL VARY WITH DIFFERENT MATERIAL DENSITIES AND SEED SIZES. SEE PROCEDURE DESCRIBED IN THE OPERATORS MANUAL TO OBTAIN A PRECISE RATE.

4) THIS RATE CHART IS NOT INDICATIVE OF THE MAXIMUM AMOUNT OF PRODUCT THAT CAN BE APPLIED. CAPACITY WILL VARY WITH GROUND SPEED AND CULTIVATOR WIDTH.

METERSHAFT SPROCKET	QUICK CHANGE SPROCKETS
25 TOOTH	45 TOOTH MAX. 11 TOOTH MIN.
35 TOOTH	33 TOOTH MAX. 11 TOOTH MIN.
40 TOOTH	26 TOOTH MAX. 11 TOOTH MIN.
15 TOOTH	45 TOOTH MAX. 18 TOOTH MIN.

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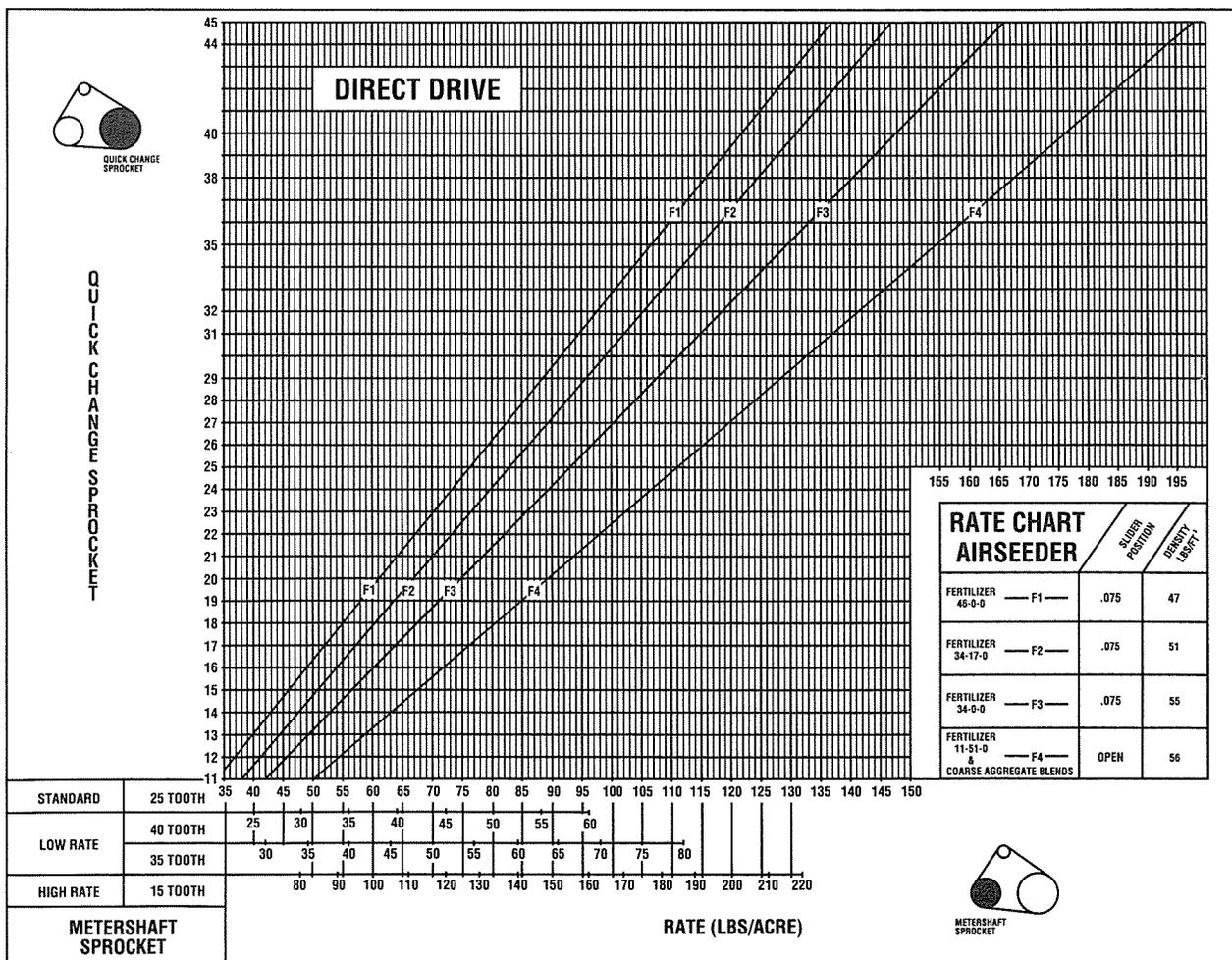
Operation

FERTILIZER CHART

NOTE: The following Sprocket sizes are available, if required through the local **MORRIS** Dealer.

Size	Part #	Size	Part #
30 tooth	N19779	39 tooth	N19799
33 tooth	N19780	41 tooth	N19513
34 tooth	N19750	42 tooth	N19797
36 tooth	N19583	43 tooth	N19798
37 tooth	N19507		

Coarse Aggregate Blends such as 11-51-0. Any **Coarse Aggregate Blends** containing **Sulphur** and/or **Potash** the sliders **MUST BE REMOVED**. **Re-calibrate** to confirm rates.



- NOTE: 1) RATE CHART APPLIES TO 8" 9" & 12" SPACINGS.
 2) CLUTCH OUTPUT SPROCKETS FOR 8" SPACING- 10 TOOTH
 9" SPACING- 11 TOOTH
 12" SPACING- 15 TOOTH
 3) THIS RATE CHART SHOULD ONLY BE TAKEN AS A GUIDE FOR FINDING THE APPROXIMATE SPROCKET. RATE WILL VARY WITH DIFFERENT MATERIAL DENSITIES AND SEED SIZES. SEE PROCEDURE DESCRIBED IN THE OPERATORS MANUAL TO OBTAIN A PRECISE RATE.

4) THIS RATE CHART IS NOT INDICATIVE OF THE MAXIMUM AMOUNT OF PRODUCT THAT CAN BE APPLIED. CAPACITY WILL VARY WITH GROUND SPEED AND CULTIVATOR WIDTH.

METERSHAFT SPROCKET	QUICK CHANGE SPROCKETS
25 TOOTH	45 TOOTH MAX. 11 TOOTH MIN.
35 TOOTH	33 TOOTH MAX. 11 TOOTH MIN.
40 TOOTH	26 TOOTH MAX. 11 TOOTH MIN.
15 TOOTH	45 TOOTH MAX. 18 TOOTH MIN.

N19477

4.16 OPERATING ENGINE

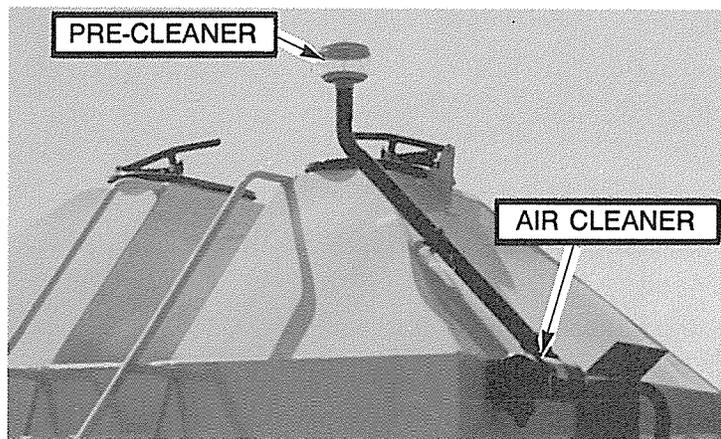


WARNING! Engine and exhaust become extremely hot from operation. Care must be taken when working around engine to prevent personal injury.

4.16.1 BEFORE STARTING ENGINE:

- (a) Check oil level, add if low.
- (b) Check fuel level, add if low.
- (c) Check to make sure all **guards** are in place.
- (d) Clean pre-cleaner and inspect air cleaner (primary filter) and check to make sure that all air cleaner parts are connected correctly.

See Maintenance Section for more detail.



- (e) Check that gas tank vented filler cap is clear.
- (f) Clear any straw or debris from the cooling fins.

Refer to engine manual for more detail.

4.16.2 STARTING ENGINE:

- (a) Set throttle between slow and fast positions.
- (b) Pull choke control out.
- (c) Activate starter switch to start engine.



CAUTION! DO NOT CRANK ENGINE FOR MORE THAN 10 SECONDS. IF ENGINE DOES NOT START, ALLOW 60 SECONDS COOL DOWN PERIOD BETWEEN STARTING ATTEMPTS.

FAILURE TO DO SO MAY CAUSE STARTER MOTOR FAILURE.

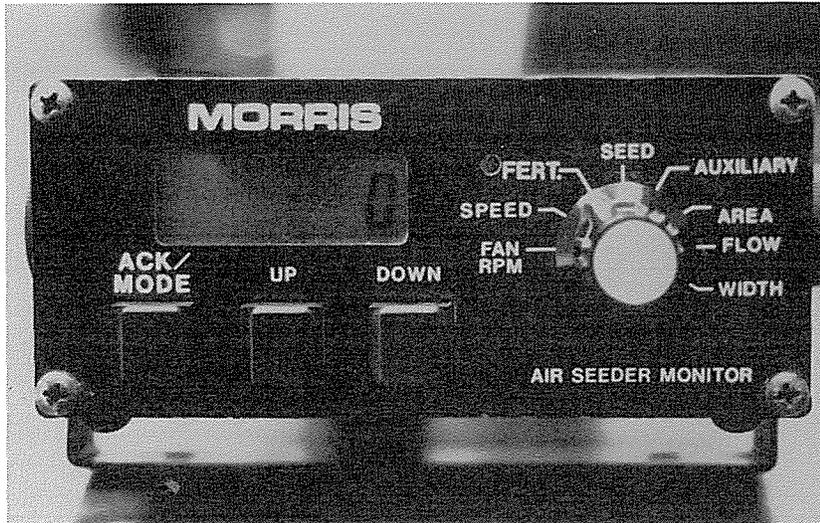
- (d) As engine warms up gradually return choke to off position.

NOTE: The engine is protected against overheating and low oil pressure by an automatic shutdown system. This is to help prevent damage to the engine should either or both occur.

Operation

4.17 INTRODUCTION

The monitor is packaged in a black anodized aluminum housing with a mounting bracket. Cables exit from the rear of the unit. The front panel contains a liquid crystal display, an eight position rotary function select switch, and three push buttons: ACK/MODE, UP, and DOWN. The on/off switch is situated on the rear of the housing.



Any or all of the following functions can be monitored:

- The r.p.m. of the fan shaft;
- Ground speed;
- The r.p.m. of up to three slow moving shafts;
- The status of up to three bin level sensors. Each bin level sensor is associated with one of the three slow moving shafts;
- Field and Accumulated area that has been worked.

Details of operation are provided in the Operating Instructions that follow.

A continuous audio alarm will sound upon low fan or shaft speed and low bin level, in any of the Airseeder Tanks. While this alarm is sounding the display will indicate what fault condition is present. Pressing the ACK/MODE button briefly will silence the alarm and the display will revert to its normal display. Every ten seconds the display will show all fault conditions that are present. When the fault condition is rectified the alarm message will be removed also.

The monitor has a number of user settable functions:

- Low fan alarm;
- High fan alarm point;
- Pulses per revolution of fan;
- Airseeder Model Constants;
- Pulses per revolution of any shaft;
- The width of the implement;
- English or metric units.

The variable parameters, as well as accumulated area are stored in the monitor memory and will be retained even when the power is disconnected.

4.18 ROTARY FUNCTION SELECTION SWITCH/FACTORY SETTINGS

The rotary selector switch has eight positions. The switch is used to select one of the following functions for display.

SWITCH POSITION	FUNCTIONS	FACTORY SETTINGS
Fan	FAN R.P.M. On/Off Low R.P.M. Settings High R.P.M. Settings	On (2) 3000 5000
Speed	GROUND SPEED Airseeder Model Constant	1704 (6130)
Fertilizer	Fertilizer Shaft R.P.M.	On (2)
Seed	Seed Shaft R.P.M.	On (4)
Auxiliary	Granular Shaft R.P.M.	Off (0)
Area/Rate	Field Area Total Area Alternate Sample Collection Method	Zeroed Zeroed -
Flow	Blockage Module Status	Off (BN = 0)
Width	Implement Width Units Selected	40 English

4.19 SETTING USER SETTABLE FUNCTIONS

4.19.1 SELECTING ENGLISH OR METRIC UNITS AND SETTING THE IMPLEMENT WIDTH

1. Turn the Rotary switch to WIDTH.
2. Press and hold the ACK/MODE button until the unit emits 4 short beeps and one (1) long beep. Then release the ACK/MODE button.
3. Approximately every 5 seconds the word "LnH" will be displayed. This indicates that the machine width can be entered or changed. Pressing the "Up" button will increase the width, pressing the "Down" button will decrease the width.
4. Push the ACK/MODE button again briefly and the word "UNIT" will flash on and the word "Eng" for English units or "tric" for Metric units will appear on the screen. To change from English to metric push the "Down" button. To change from metric to English push the "Up" button.

Note: When the unit is set in Metric, the decimal point in the "machine width display" will continuously flash.

5. To store the settings made into the monitor memory, press and hold the ACK/MODE button until the unit emits (4) four short beeps and one (1) long beep. Then release the ACK/MODE button.

IMPORTANT: If the above is not done and the rotary switch position is changed, the unit will not store the changes made to that function into the memory.

Operation

4.19.2 SETTING FLOW PARAMETERS

Set the rotary switch to Flow.

- (a) If there is no flow monitoring on the cultivator, the screen should display “-----”. If this display is shown, go to Section 4.19.2.
- (b) If the display reads “OPEN”, and there is no flow monitoring on the cultivator, or the unit is equipped with flow monitoring but is not wanted, the following must be done to reset the monitor and prevent nuisance alarms.
 1. Press and hold the ACK/MODE button until the unit emits (4) four short beeps and (1) one long beep. Then release the ACK/MODE button. The display will read “bnx” where “x” represents the number of blockage modules.
 2. Set this value “x” to “0” zero by pressing the “Down” button.
 3. Press the ACK/MODE briefly and the display will show “tyw”. The value “w” must always be set to “0” zero. Use the “down” button to set this value to zero.
 4. Pressing and holding the ACK/MODE button until the unit emits (4) four short and (1) one long beep will store the settings made into the monitor memory.

4.19.3 SWITCHING THE SHAFT/BIN LEVEL ALARMS *ON OR OFF*

The monitor is preset at the factory so that both the Seed and Fertilizer shaft/bin level alarms are on and the Auxiliary shaft/bin is off.

At times, when only one tank is being used the shaft/bin monitor for the tank or tanks **not** being used should be switched off.

This will prevent any nuisance alarms occurring.

SWITCHING THE SHAFT/BIN ALARMS OFF

1. Turn the rotary switch to which shaft/bin that needs to be turned off. i.e.: Seed, Fertilizer or Auxilliary.
2. Push and hold the ACK/MODE button until the unit emits (4) four short beeps and (1) one long beep. Then release the ACK/MODE button.
3. Approximately every 5 seconds the word “PLSE” will be displayed. This indicates that the number of pulses per revolution of the meter/shaft can be changed.
4. Change the number to “0”zero by pressing the “Down” button.
5. Push and hold the ACK/MODE button until the unit emits (4) four short beeps and (1) one long beep. Then release the ACK/MODE button.

This stores the new setting into the monitor's memory and the screen now displays the word “OFF”. When the shaft is turned off the corresponding bin level alarm is also turned off.

SERVICE BULLETIN



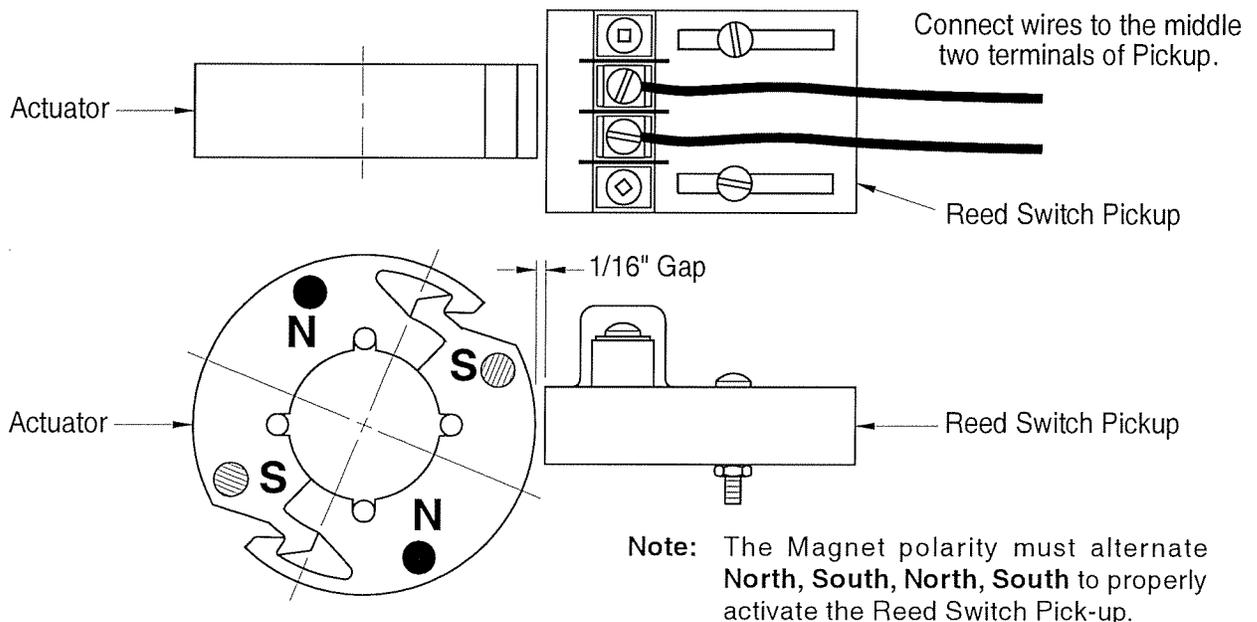
Reference: Air Seeder Monitor with Ack/Mode Button

On some Air Seeders the Magnetic field created by the clutch can affect the monitor ground speed and acre tally functions. Some typical effects are Monitor reading only 1/2 the ground speed, 1/2 the acres covered, erratic readings and no readings at all.

This problem can be corrected by taking the following steps:

1. Check Monitor is correctly programmed before proceeding.
2. Check to ensure the Reed Switch Pickup is installed and wired correctly. See diagram below.
3. Change the number of magnets in the Actuators from (2) two to (4) four. See diagram below.
4. Change the pick-up gap from 1/8" to 1/16". See diagram below.
5. Change the monitor constant (Double the constant). See chart below for new constant.
Refer to section 4.19.4 **Setting the Air Seeder Constants** for procedures on changing constant.

Note: Magnets are available through the Parts Department under part number N24302.



CONSTANT SETTINGS		
Air Seeder Model	Old with 2 Magnets	New with 4 Magnets
6130	1704	3408
6180	1502	3004
6240 & 6300 with All Weather Tires	1126	2252
6240 & 6300 with Rice Tires	1024	2048

* This modification ***MUST*** be made on all Air Seeders with an auxiliary clutch.

4.19.3 SWITCHING THE SHAFT/BIN LEVEL ALARMS 'ON' or 'OFF' (Continued)

SWITCHING THE SHAFT/BIN ALARMS ON

1. Turn the Rotary switch to whichever shaft/bin that needs to be turned on.(i.e. Seed, Fertilizer or Auxilliary.)
2. Push and hold the ACK/MODE button until the unit emits (4) Four short beeps and (1) one long beep. Then release the ACK/MODE button.
3. Approximately every 5 seconds the word "PLSE" will be displayed. This indicates that the number of pulses per revolution of the meter/shaft can be changed.

The number of pulses is represented by the number of magnets in the sensor DONUT on the shaft.

PULSE SETTINGS		
	Tank	Settings
Fertilizer	Rear	2
Seed	Front	4
Auxilliary	Granular Tank	4

4. Change the number displayed to the correct setting by pushing the "Up" or "Down" button.
5. Push and hold the ACK/MODE button until the unit emits (4) four short beeps and (1) long beep. Then release the ACK/MODE button. The above stores the new settings into the monitor memory and the screen will now display "O". When the shaft turns the display will show the R.P.M. of the Shaft.

4.19.4 SETTING THE AIRSEEDER CONSTANTS

PULSE SETTINGS	
MODEL 6130	1704 (Factory Setting)
MODEL 6180	1502 (See below for setting procedures)
MODEL 6240 & 6300 with All Weather Tires	1126 (See below for setting procedures)
MODEL 6240 & 6300 with Rice Tires	1024 (See below for setting procedures)

FOR MODEL'S 6180, 6240, 6300

1. Turn the rotary switch to Speed.
2. Push and hold theACK/MODE button until the unit emits (4) foru short beeps and (1) one long beep. Then release the ACK/MODE button.
3. Approximately every 5 seconds the word "PLSE" will be displayed. The number displayed should be 1704. Push the "Down" button to change the setting from 1704 to 1502 for the 6180 and 1126 for the 6240 with All Weather Tires and 1024 for the 6240/6300 with Rice Tires.
4. Push and hold theACK/MODE button until the unit emits (4) four short beeps and (1) one long beep. Then release theACK/MODE button. The new Air Seeder constant will now be stored in the monitor memory.

Operation

4.19.5 SETTING THE FAN PARAMETERS

The Factory settings are as follows:

Fan R.P.M. Display Low R.P.M. Alarm Settings High R.P.M. Alarm Settings	On (2 Pulses/Rev) 3000 R.P.M. 5000 R.P.M.
NOTE: It is strongly recommended that the fan R.P.M. display remain On at all times.	

ADJUSTING LOW & HIGH R.P.M. ALARM SETTING

1. Set the Rotary switch to FAN R.P.M.
2. Push and hold the ACK/MODE button until the unit emits (4) four short beeps and one (1) long beep. Release the ACK/MODE button.
3. The Display will now show the number of pulses (2) that are required to give the correct fan R.P.M. reading. Approximately every 5 seconds the word "PLSE" will be displayed. This is to indicate that the number of pulses can be changed if required.
4. Push the ACK/MODE button again briefly. The word "FAnL" will be briefly displayed followed by a number. The word "FAnL" will continue to appear approximately every 5 seconds. This is the number for the **Low** R.P.M. ALARM SETTING.
To LOWER the setting press the "Down" button. To INCREASE the setting press the "Up" button.
5. Push the ACK/MODE button again briefly. The word "FAnH" will be briefly displayed followed by a number. The word "FAnH" will continue to appear approximately every 5 seconds. This number is for the **High** R.P.M. ALARM SETTING.
To LOWER the new setting press the "Down" button. To INCREASE the setting press the "Up" button.
6. To store the new settings into the monitor memory, push and hold the ACK/MODE button until the unit emits (4) four short beeps and (1) long beep.

4.19.6 RESETTING THE ACRE METER

1. Turn the rotary switch to AREA.
2. The display will show either "Fxxx.x" or "Axxx." indicating either Field or Accumulated acres respectively. Pressing the ACK/MODE button briefly will change the display from one to the other.

NOTE: If either the "A" or "F" letters flash when displayed, then the monitor has been set in metric units. See section 4.19.1

RESETTING THE ACCUMULATED AREA TO ZERO

With the display showing "Axxxx", press and hold the "Up" and "Down" buttons together until the unit emits (4) four short beeps and (1) one long beep.

The display will now show "0".

RESETTING THE FIELD AREA TO ZERO

With the display showing "Fxxx.x" press and hold the "UP" and "DOWN" buttons together until the unit emits (4) four short beeps and (1) one long beep.

The display will now show "0".

4.20 OPERATION

4.20.1 ALARMS

When an alarm condition arises the monitor will beep continuously and the display will show which alarm has been activated regardless of the rotary switch position.

The alarm can be silenced by pressing the ACK/MODE button once for each alarm that is activated.

Once all activated alarms have been silenced then the monitor will return to the display that the rotary switch is set on. The display will continue to show the activated alarms once every 10 seconds. If the unit is in the "User Settings" mode then any alarms that sound have to be acknowledged by pressing the ACK/MODE button before the user settings can be changed.

ORDER OF ALARM PRIORITY	
DISPLAY	ALARM DESCRIPTION
FAN	Too High Or Too Low Fan Speed
SEEd	Seed Shaft Not Rotating
FErt	Fertilizer Shaft Not Rotating
ASFt	Granular Shaft Not Rotating
Erx (where x is any number 1 thru 10)	Blockage Modules Not Connected See Section 4.19.2
Sbin	Seed Tank Low In Product
Fbin	Fertilizer Tank Low In Product
Abin	Granular Tank Low In Product

4.20.2 GROUND DRIVE ALARM (CLUTCH OPERATION)

Whenever the monitor detects the ground speed going through 2.0 m.p.h., a short double beep will sound. This will occur when the ground speed is increasing or decreasing. There is no visual display associated with this.

This is to inform the operator that the clutch is engaged and working correctly.

4.20.3 RATE CHECK USING THE MONITOR

The 2004 Monitor has the ability to calculate the product rate. This feature takes into account tire sinkage and soil conditions.

NOTE: IMPORTANT

The fan must **not** be running when a rate check is being taken.

1. Remove the Wing Nuts. (See Fig. 28). Page 4.13.
2. Remove the bottom of the collector. (See Fig. 29). Page 4.13.

Operation

4.20.4 RATE CHECK USING THE MONITOR (Continued)

3. Remove the metering chain from the transmission that is **not** being checked. (See Fig. 26). Page 4.12.
4. Check that the desired rate change sprocket is installed in the transmission. (See rate charts and Fig. 26 & 27). Page 4.12.
5. Turn the crank until material begins to fall through the collector body. (See Fig. 28). Page 4.13.
6. Slide rate check box onto the collector body. (See Fig. 29). Page 4.13.
7. Turn the rotary switch to AREA.
8. Press and hold the ACK/MODE button until the unit emits (4) four short beeps and (1) one long beep.
9. The screen will display "OrOO". The "r" will flash if the unit is in metric units.
10. This display will indicate the area covered for the rate check precise to 1/100 acre.
11. Engage the electric clutch. Ensure the FAN is **not** running.
12. Drive the tractor forward until the display reads at least Or10 (1/10 acre); Or50 = 1/2 acre, 1rOO = 1 acre.
13. Stop the tractor and weigh the sample with the supplied scale. **NOTE:** REMEMBER to subtract the weight of the rate check box. Note the weight of the sample.
14. Press the ACK/MODE button briefly. The display will briefly display the word "nEt" then "OO.OO".
15. Enter the sample weight, using the "Up" button. The first two digits indicate pounds and the last two digits indicate ounces.

"OO .OO"
↑ ↑
lbs. ounces

When the unit is in "Metric units" the first two digits indicate kg. and the last two digits 100ths of kg.

"OO .OO"
↑ ↑ ↑
kg. kg. kg.
10 100

16. Once the correct weight is entered, press the ACK/MODE button briefly. The display will show "RATE" briefly and then a number will appear in the display.
This number is the **Rate** in pounds per acre, if the unit is set in English units.
When the unit is set in "Metric units" the rate will be expressed as Kilograms per hectare.
17. To exit this mode simply press and hold the ACK/MODE button until the unit emit (4) four short beeps and (1) one long beep.
The monitor will now return to displaying either the field area or the accumulated area.

4.21 TECHNICAL SPECIFICATION

4.21.1 FAN R.P.M.

Fan r.p.m. is displayed when the selector switch is set to FAN.

The r.p.m. range is 0-9990 r.p.m. with a resolution of 10 r.p.m.

The input signal is from a magnetic reluctance sensor with a programmable number of pulses per revolution.

The fan r.p.m. is continuously monitored for alarm purposes.

The alarm sounds when the fan speed falls below the user variable low alarm set point or goes above the user variable high alarm set point.

Response time to an alarm condition is 1 second maximum.

4.21.2 SHAFT R.P.M.

Three shaft speeds: Seed, Fertilizer, and Auxilliary, are monitored. Shaft speeds are displayed when the rotary switch is set to the appropriate position.

The operator may disable unwanted shaft alarms.

Shaft r.p.m. varies with the application rate from 10 r.p.m. to 1400 r.p.m.

The input signal is from a reed switch with a programmable number of pulses per revolution.

All shaft speeds are continuously monitored for alarm purposes.

An alarm will be generated whenever there is more than 15 seconds between reed switch hits.

Shaft alarm generation will be delayed by 30 seconds if ground speed is below 2 m.p.h. This delay is intended to reduce nuisance alarms when turning on headlands.

4.21.3 BIN LEVEL INDICATION

Three bin levels are monitored: Seed, Fertilizer and Auxilliary.

The input signal is a micro switch opening from ground; for an empty bin; or a Vansco 77000 series optical Type Full Bin Detector.

To minimize nuisance alarms, there is a 15 second delay before the bin alarm is displayed.

When a shaft input is disabled, the corresponding bin level input is also disabled.

4.21.4 GROUND SPEED

Ground speed in either "m.p.h." or "k.p.h." is displayed when the selector switch is set to SPEED. [k.p.h. is obtained by selecting metric units when in width mode.]

Normal speed is 2.5 m.p.h. to 25 m.p.h. The display is to one decimal place.

When displaying k.p.h., the decimal point will flash.

The speed is sensed from a reed switch on the clutch drive shaft.

A short double beep is given when the monitor detects the loss or resumption of the ground speed signal. Loss of ground speed signal is defined as 2 M.P.H.

Operation

4.21.5 AREA METER

Accumulated or Field areas are displayed when the selector switch is set to AREA. The value displayed is the area accumulated since the last resetting, in either acres or hectares. [Hectares units are obtained by selecting metric units when in width mode.]

Field Area is displayed in 0.1 acre or 0.1 hectare increments.

Accumulated Area is displayed to the nearest acre or hectare.

When displaying hectares, the decimal point will flash.

The field and accumulated area is stored in non volatile memory to a maximum of 999.9 and 9999 acres respectively. The display then rolls over and begins again from 000.0 [0000]. When displaying area in hectares, the display will roll over at 404.7 [4047] Ha, which is the metric conversion of 999.9 [9999] acres.

The operator should note that the area accumulation accuracy depends on a number of variables such as overlap, turns on the head lands, and unclutching the ground drive. The monitor assumes there is no overlap when making its calculations.

4.21.6 IMPLEMENT WIDTH

Implement width is displayed when the selector switch is set to WIDTH.

The width may be adjusted with the "Up" and "Down" buttons. The range is 0 to 100 in 0.1 foot steps. [When in metric mode the range is 0 to 30.4 meters in 0.1 meter steps.]

Settings are stored in non volatile memory.

4.21.7 GENERAL ELECTRICAL SPECIFICATION

The monitor operates from 12 VDC nominal, 8 V min., 18 V mx.

It withstands 24 V transients for one minute max., and reverse voltage until the fuse blows. Use correct size fuse (3 Amp F.B.)!

WARNING: Installing an incorrectly sized fuse could result in permanent damage to the monitor, and void the warranty.

The monitor and blockage modules are not damaged by electrical noise such as radio transmissions, load dumps, inductive switching, alternator field decay, and static electricity in plastic pipes.

Operating temperature range is from -10 degrees C to +40 degrees C.

4.21.8 WIRING GUIDE

The monitor is supplied with a 12 conductor cable terminated with a 12 conductor Brylite plug. This cable connects to the air seeder via an intermediate extension harness on the cultivator. Pin assignments area as follows:

Pin	1	Seed Shaft Sensor
	2	Fan Sensor
	3	Ground Speed Sensor
	4	Ground
	5	Fertilizer Shaft Sensor
	6	Seed Bin Level Sensor
	7	Fan Ground
	8	Fertilizer Bin Level Sensor
	9	+ 12 Volts DC
	10	Blockage Module Data I/O
	11	Auxilliary Shaft Sensor
	12	Auxilliary Bin Level Sensor

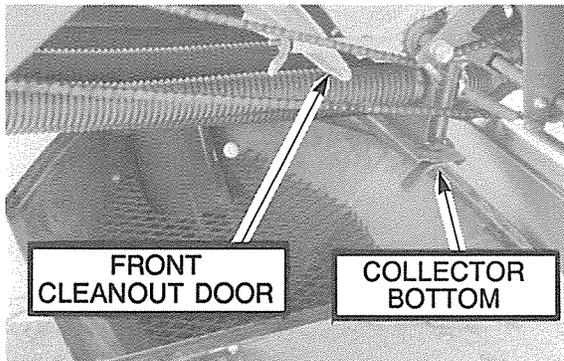
4.22 UNLOADING AND CLEANOUT



DANGER! KEEP ALL SHIELDS IN PLACE. KEEP HANDS, FEET AND CLOTHING AWAY FROM AUGER INTAKE, FAILURE TO DO SO WILL RESULT IN SERIOUS INJURY OR DEATH.

Emptying tanks is quick and easy to do.

1. Position auger under the tank to be emptied.
2. Start auger.
3. Loosen front cleanout door on metering body.
4. Regulate flow from the tank by loosening or tightening front cleanout door as required.
5. Once all material stops flowing, remove cleanout door completely and brush out remaining material in the corners.

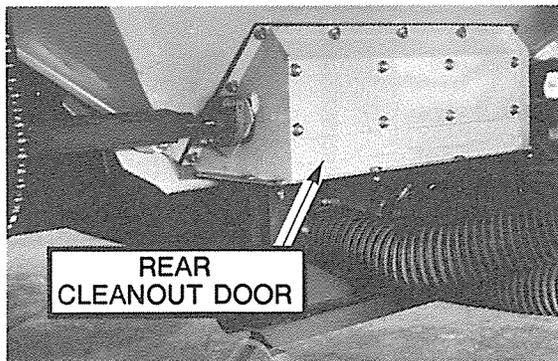
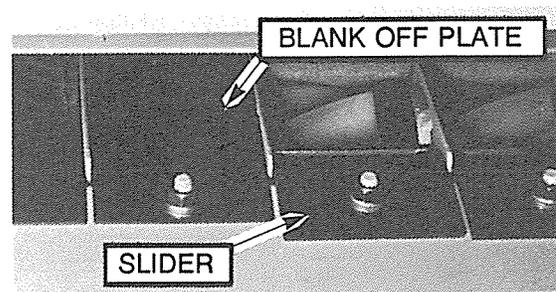


Front Cleanout Door

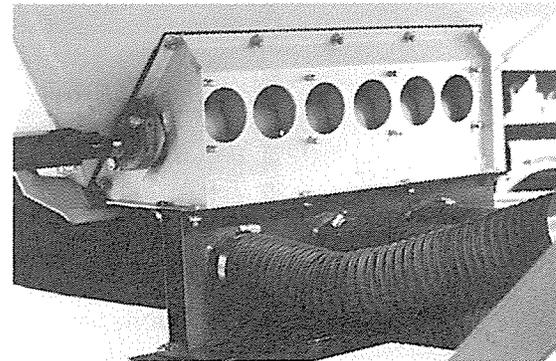


Front Cleanout Door Removed

6. For complete cleanout:
 - (a) Remove all sliders and Blank off Plates.
 - (b) Remove the collector bottom.
 - (c) Run fan.
 - (d) Remove rear cleanout door and either blow or wash out any remaining material in the openings.
 - (e) Re-install the sliders, Blank off Plates, collector bottom, front and rear cleanout doors.



Rear Cleanout Door



Rear Cleanout Door Removed

5 Maintenance

5.1 DAILY MAINTENANCE (Every 10 Hours)



CAUTION! TRACTOR ENGINE SHOULD BE STOPPED AND WHEELS LOCKED TO PREVENT ANY MOVEMENT DURING SERVICING.

ALWAYS WEAR SAFETY GOGGLES, BREATHING APPARATUS AND GLOVES WHEN WORKING ON SEEDER FILLED WITH FERTILIZER. FOLLOW MANUFACTURERS RECOMMENDED SAFETY PROCEDURES WHEN WORKING WITH FERTILIZERS OR TREATED SEEDS.

DO NOT FEED LEFT OVER TREATED SEED TO LIVESTOCK OR HAUL SEED TO ELEVATOR, TREATED SEED IS POISONOUS AND MAY CAUSE HARM TO PERSONS OR LIVESTOCK.

ALWAYS MAKE SURE THAT PRESSURE IS RELIEVED FROM HYDRAULIC CIRCUITS BEFORE SERVICING OR DISCONNECTING FROM TRACTOR. FAILURE TO DO SO MAY RESULT IN HYDRAULIC FLUID BEING INJECTED INTO THE SKIN WHICH MAY RESULT IN GANGRENE.

TO PREVENT PERSONAL INJURY, DO NOT WALK WITHIN RADIUS OF RAISED CULTIVATOR WINGS.



WARNING! TO PREVENT PERSONAL INJURY KEEP HANDS, FEET AND CLOTHING AWAY FROM MOVING PARTS. KEEP ALL COVERS, SHROUDS AND GUARDS IN PLACE.

ENGINE AND EXHAUST BECOME EXTREMELY HOT FROM OPERATION, CARE MUST BE TAKEN WHEN WORKING AROUND THE ENGINE TO PREVENT PERSONAL INJURY.

GASOLINE IS EXTREMELY FLAMMABLE. KEEP PERSONAL SAFETY IN MIND, KEEP GASOLINE AWAY FROM OPEN FLAMES, SPARKS OR CIGARETTES.

IMPORTANT

- MAKE SURE FAN INLET SCREEN IS KEPT CLEAN.
 - CHECK THAT ALL ROTATING PARTS ROTATE FREELY.
 - IF FAN VIBRATES EXCESSIVELY WHILE OPERATING, CHECK FOR:
 - A) DIRT OR DEBRIS BUILD UP ON BLADES
 - B) DAMAGED ROTOR.
- REFER TO OPERATORS MANUAL FOR MORE DETAILS.

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Maintenance

5.1 DAILY MAINTENANCE (Every 10 Hours) (Continued)

- Check for and remove any water in primary collectors after rainy weather. Remove both front and rear cleanout doors and collector bottom to drain water from the tank and collectors. (See Fig. 31, A, B & C).
- Reinstall collector bottoms.
- Assure fan screen is clear of debris.

NOTE: Start fan and run for 3 - 5 minutes prior to loading machine to get rid of accumulated moisture.

ATTENTION **IMPORTANT!**
Care must be taken when reinstalling collector bottoms to prevent damage to the inside of the collector.

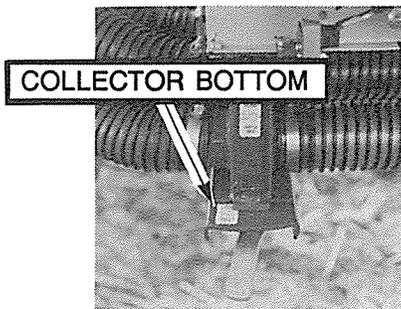


Figure 31

ATTENTION **IMPORTANT!**
Air flow arrows must point to the front of the airseeder.

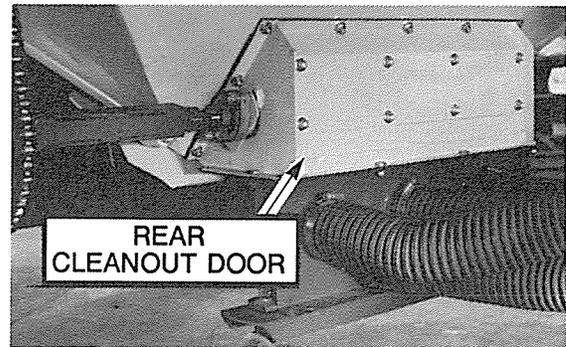


Figure 31B

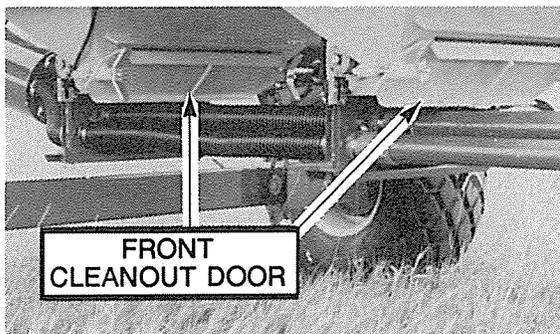


Figure 31C
Front Cleanout Door

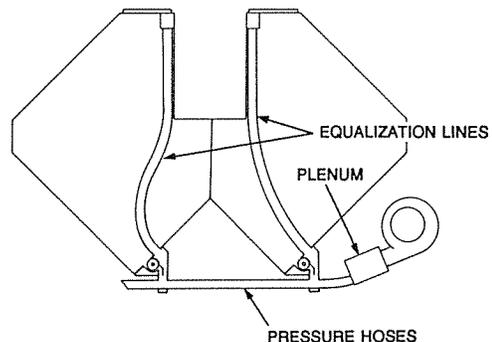


Figure 32

- Check lid seals for damage, and that they are sitting properly on steel ring.
- Check tank pressure hoses and equalization lines for leaks, cracks or plugging. (See Fig. 32).
- Check plenum and metering body for leaks. (See Fig. 32).
- Check that cleanout doors are sealed.
- Check monitor wiring that all sensor wires are properly routed and retained.
- Check for plugged hoses.



WARNING! Check hydraulic hoses for leaks. Do not search for leaks without hand and face protection. A tiny, almost invisible leak can penetrate the skin, requiring immediate medical attention.

Maintenance

5.1 DAILY MAINTENANCE (Every 10 Hours) (Continued)

Check for free movement of spring loaded chain tension idlers. (See Fig. 33).

Assure drive chains are cleared of mud and debris.

Visually inspect wheel bolts for looseness.

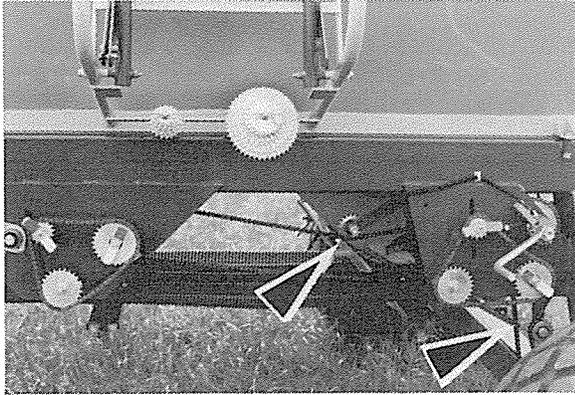


Figure 33
Spring Loaded Chain Tension Idlers

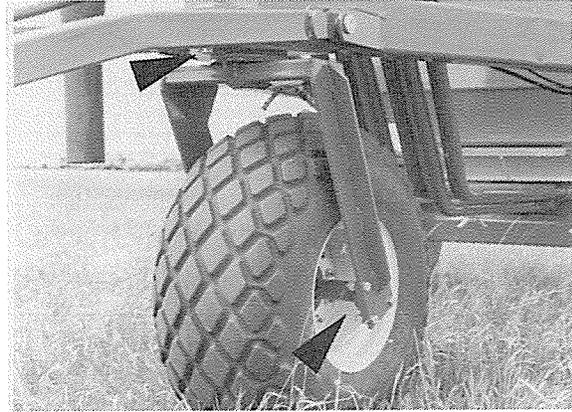


Figure 34

5.1.1 DAILY GREASING

- (a) Grease Castor Fork 2 places. (See Fig. 34).
- (b) Castor fork axle bearings 2 places. (See Fig. 34).
- (c) Main Drive chain bearings 2 places. (See Fig. 36).
- (d) Slow Speed Drive 2 places. (See Fig. 36A).
- (e) Meter Shaft Bearings. (See Fig. 35).

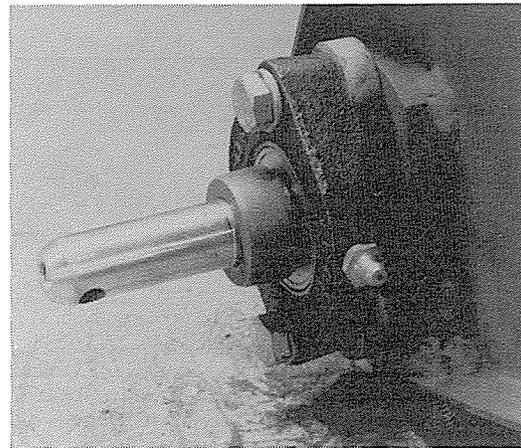


Figure 35

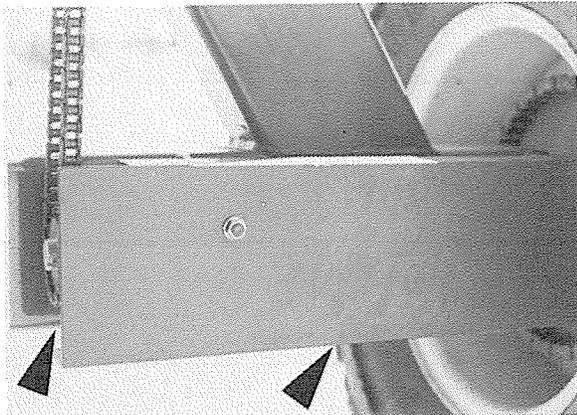


Figure 36

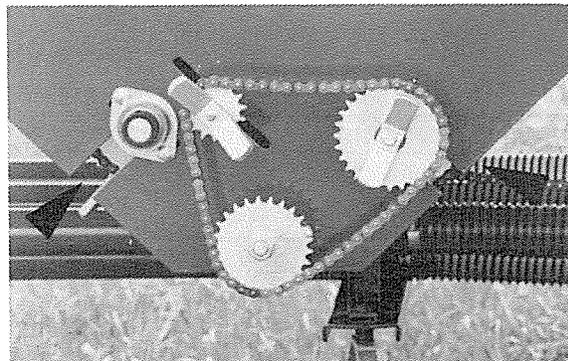


Figure 36A

5.2 DAILY ENGINE MAINTENANCE

* See Engine Operators Manual.

- (a) Check oil level. It is **very** important that the engine is **not** overfilled with oil. Normal oil consumption for the 2 cylinder Kohler engine used on the 6130 Airseeder is up to 1 pint of oil per day. Taking a day to be 8 working hours.

If the engine is overfilled with oil, the following will happen:

- (1) Oil will be pumped out of the exhaust pipe.
 - (2) Overfilling causes air ingestion and foaming of the oil which results in poor lubrication and subsequent damage to the engine.
- (b) Check that all air-intake hoses and clamps are in place and tight.
- (c) Check that engine cooling fins are free from dirt, straw, etc.
- (d) Clean flywheel screen of any debris.
- (e) CLEAN cyclone pre-cleaner.
- (f) Check that the activator valve on aircleaner is clear of debris. (See Fig. 37).
- (g) Check that vent in fuel cap is clear.
- (h) Check Belt tension. (See Section 5.8 for adjustment).



WARNING! ENGINE AND EXHAUST BECOME EXTREMELY HOT FROM OPERATION. CARE MUST BE TAKEN WHEN WORKING AROUND ENGINE TO PREVENT PERSONAL INJURY.

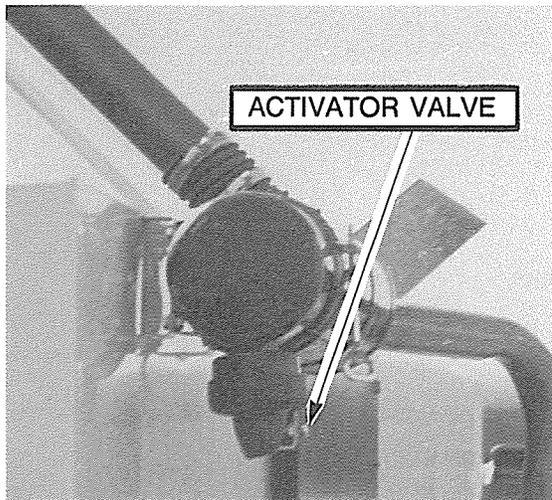


Figure 37

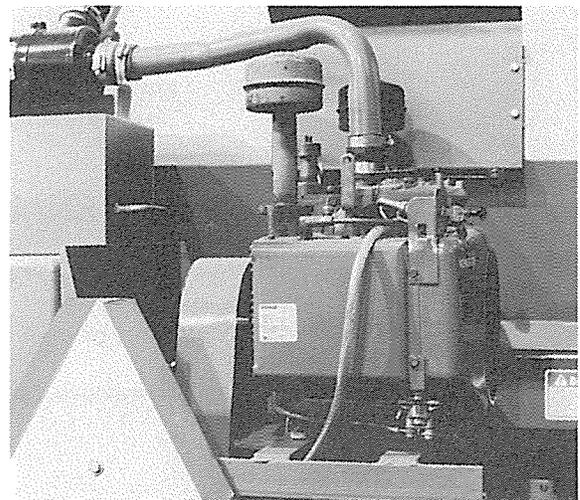


Figure 38

5.3 WEEKLY ENGINE MAINTENANCE

* See Engine Operators Manual.

- (a) Service Primary Air filter element. (See Section 5.6 for details).
- (b) Change oil and filter (See ENGINE OPERATORS MANUAL).
- (c) Clean cooling fins and external surface of engine. Ensure shrouds are re-installed. Failure to do so will result in damage to the engine due to overheating. (See Fig. 38).

Maintenance

5.4 AIR CLEANER MAINTENANCE

The Air Cleaning system on the 6000 Series Air Seeder consists of 3 stages:

1. A cyclone pre-cleaner that should be cleaned daily.
2. A primary paper element that should be cleaned weekly. Release the dirt and dust by hitting the element against your hand.
Never strike against a hard surface or use compressed air when cleaning the element.
3. Check element for pinholes using a trouble light. If there are any pinholes then replace element immediately.
4. A safety element is located inside the primary element. This element should be inspected and cleaned the same as the primary element. If the safety element is dirty, there is a problem with the primary element and both the primary element and the safety element should be replaced.
5. When re-assembling the air filter, ensure unit is assembled correctly and is sealed completely.
6. Check that activator valve is clear of debris.



IMPORTANT! DAMAGED OR LOOSE COMPONENTS WILL ALLOW UNFILTERED AIR INTO THE ENGINE CAUSING PREMATURE ENGINE WEAR AND FAILURE.

5.5 GENERAL ENGINE MAINTENANCE

- (a) Check and/or replace spark plugs every 100 hours.
- (b) Replace fuel filters on engine and on fuel intake line below tank every 100 hours.
- (c) Have engine serviced at the respective Engine Service Dealer every 500 hours.

5.6 AIR SYSTEM MAINTENANCE



CAUTION! Care should be taken when working near the Airseeder while the fan is running. Product blowing out of the system could cause personal injury.

- (a) Regularly check that all hoses are free from kinks or blockages. To ensure hoses are free from blockages, with the seeding tool out of the ground and with the fan running turn crank a couple of turns. Equal amounts of material should be deposited under each boot.

5.6 AIR SYSTEM MAINTENANCE (Continued)

- (b) Keep fan inlet screen clear and free from debris.
- (c) Place a plastic bag over the fan when the unit is not in use. This helps prevent moisture from entering the system.
- (d) Check periodically and at the end of each season for air leaks at hose connections.
- (e) Check periodically and at the end of each season for air leaks.
 - (1) Lid seals.
 - (2) Metering body to tank interface.
 - (3) Collector to metering body interface.
 - (4) Fan to plenum.
 - (5) Plenum to collector.
 - (6) Cleanout doors.
 - (7) Couplers between seeder and cultivator.

NOTE: There must not be any air leaks from the tank. This air leakage causes air turbulence in the tank which can result in inaccurate metering rates.

- (f) Once a year check for wear of primary and secondary hoses.

NOTE: Extended life can be obtained if the hoses are rotated 1/4 turn once a year.

5.7 TANK LID ADJUSTMENT

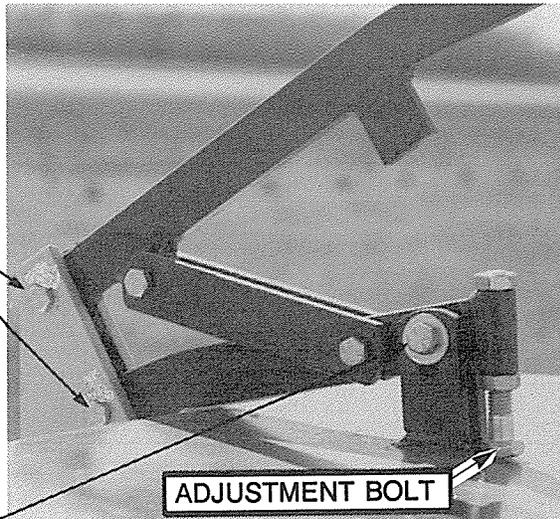
If the lid seal is leaking then the following adjustments must be made to prevent this from occurring:

- (a) Check seal for cuts, abrasions and any material embedded in the seal.
- (b) Clean out foreign material.
- (c) If seal is cut or severely worn, then replace seal.
- (d) Ensure that seal is positioned properly on steel rim around tank opening.
- (e) Close lids, run fan at max. r.p.m. and check for leaks.
- (f) If lids are still leaking turn bolt down one or two turns. Make sure handle snaps over centre, locking the lid. (See Fig. 39)
- (g) Re-check for leaks. If lids still leak turn down bolt one or two more turns. Re-check for leaks.

Maintenance

5.7 TANK LID ADJUSTMENT (Continued)

NOTE: These bolts and lock nuts can be tightened to maintain a friction fit so that the lid stays stationary when in open position.



NOTE: This bolt should be loose enough to allow lid to float in this slot.

Figure 39

5.8 FAN MAINTENANCE (Engine drive)

- (a) Check belt tension on engine driven fan weekly. Spring length should be 8 to 8 5/8" long.
- (b) If Spring length is incorrect, loosen jam nut and adjust the 3/4" nut down until the correct spring length is obtained.
- (c) If there is no adjustment left then replace belt.
- (d) To prevent water entering the air system, it is strongly recommended that a plastic bag be placed over the fan covering the intake whenever the seeder is not in use.

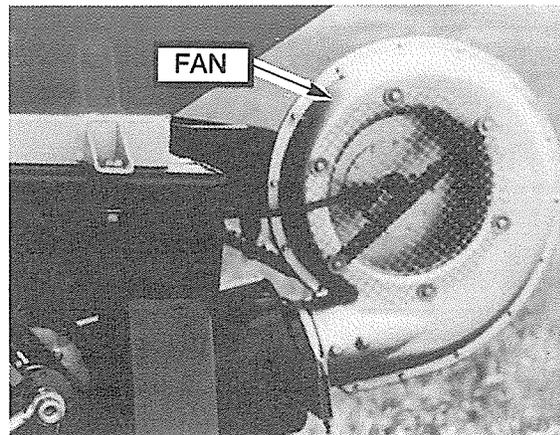
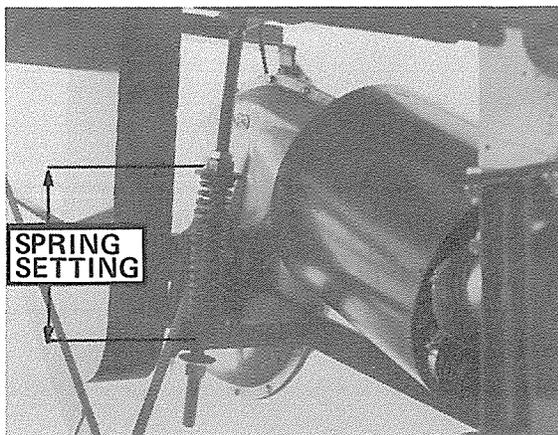


Figure 40

5.9 HYDRAULICS

- Inspect hydraulic system for leaks, damaged hoses and loose fittings.
- Hose and hydraulic tubing can only be repaired by replacement. **Do Not Attempt Repairs With Tape Or Cements.** High pressure will burst such repairs and cause system failure and possible injury.
- Fittings - use Teflon seal tape on all NPT hydraulic joints. Do not over-tighten. Do not use on JIC Ends!
- Hydraulic Hose Connections - when connecting the hoses to the cylinders, tubing, etc. always use one wrench to keep the hose from twisting and another wrench to tighten the union. Excessive twisting will shorten hose life.
- Keep fittings and couplers clean.
- Check the Tractor Manual for proper filter replacement schedule.
Refer to the Trouble Shooting Section



Dirt in the hydraulic system could damage O-rings, causing leakage, pressure loss and total system failure!

NOTE: Extreme care must be taken to maintain a clean hydraulic system. Use only new Hydraulic fluid when filling reservoir.

5.10 WHEEL BEARINGS

- Inspect wheel for tread wear and sidewall abrasions, replace if necessary.
- Tighten wheel bolts - refer to the Bolt Torque Chart.
- Check tire pressure. Refer to tire chart on page 5.10.

Bolt Torque Instructions				
 GRADE 5 (3 marks)		BOLT	 GRADE 8 (6 marks)	
Nm.	lb. ft.	SIZE	lb. ft.	Nm.
11	8	1/4	12	16
23	17	5/16	24	33
41	30	3/8	45	61
68	50	7/16	70	95
102	75	1/2	105	142
149	110	9/16	155	210
203	150	5/8	210	285
366	270	3/4	375	508
536	395	7/8	610	827
800	590	1	910	1234

(Figures above are for fine threads subtract 10% from readings for coarse threads)

Contact your nearest Dealer for genuine repair parts. Dealers carry ample stocks and are backed by the manufacture and regional associations:

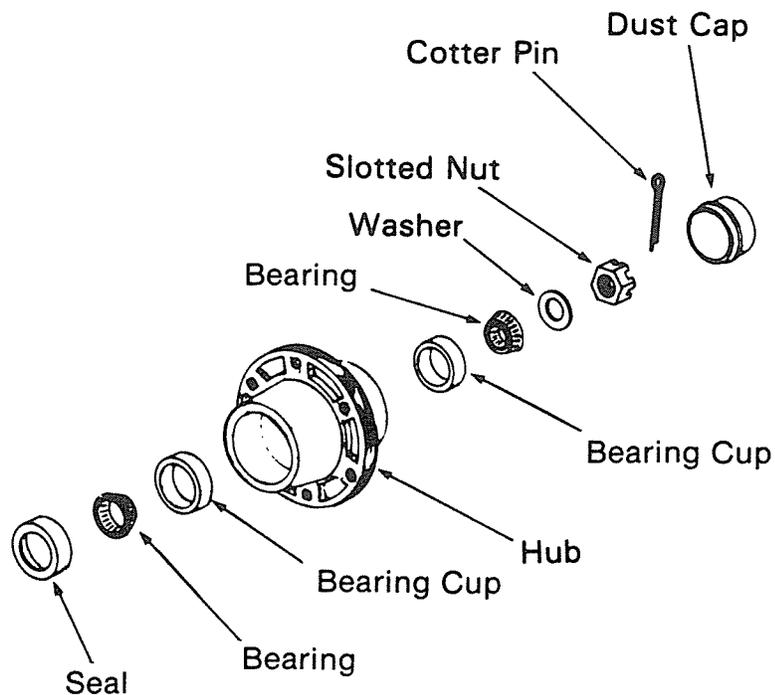


Tire replacement requires trained personnel and proper equipment.

Maintenance

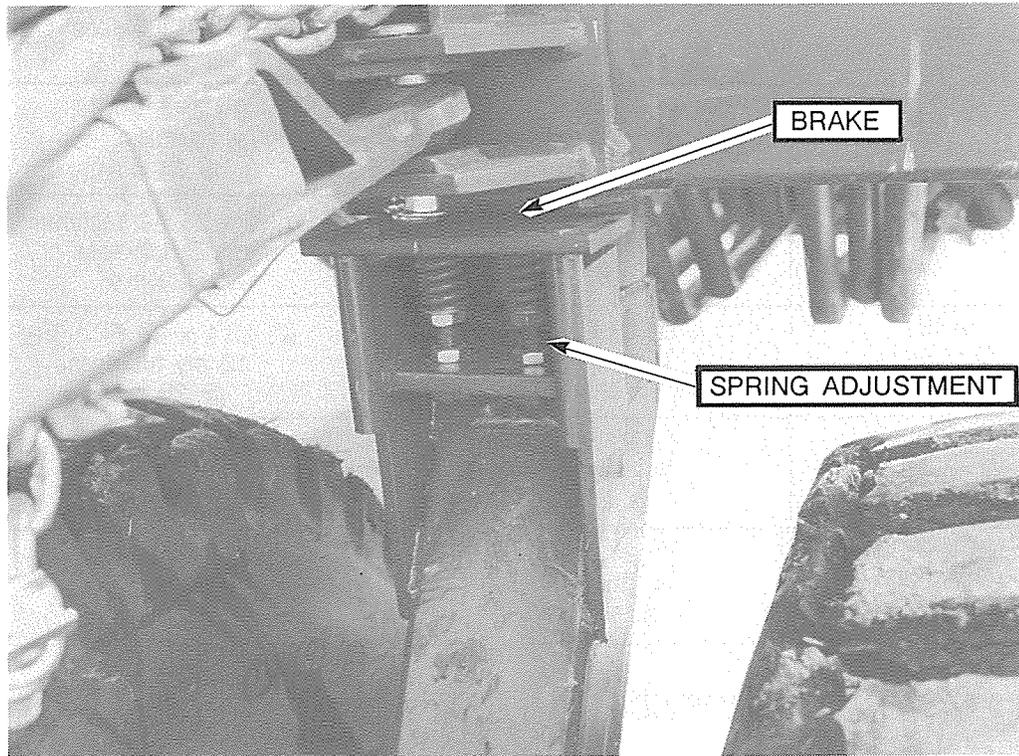
5.10 WHEEL BEARINGS (Continued)

- Shut tractor off and remove key.
- Block wheels on tractor. Block Airseeder.
- Remove the Dustcap Cotter Pin and the slotted nut and washer.
- Be careful when pulling the hub off as not to drop the outer bearing.
- Clean spindle and bearing components with solvent.
- Inspect for wear on bearings, spindle and cups, replace if required.
- Do not reuse old seals. Use only new seals when reassembling.
- Pack inner hub with bearing grease.
- Be sure bearing and cup are dry and your hands are clean.
- Place grease in the palm of your hand and work grease into the bearing rollers, rotating the bearing as you go.
- Install inner bearing and cup first, then press new seals in place.
- Place hub on spindle.
- Install outer bearing, washer and slotted nut.
- Tighten Nut while turning the wheel until a slight drag is felt.
- Back Nut off one slot and install a cotter pin. Then bend up around Nut.
- Pack grease inside the dust cap and tap into position.



Maintenance

5.11 FRONT CASTOR BRAKE ADJUSTMENT 6240 & 6300



IMPORTANT

Dual wheel brake should provide sufficient pressure to stabilize caster at all travel speeds. Avoid setting more pressure on brake pad than required to maintain stability.

- The brake is pre-adjusted at the factory and need only be adjusted if the castor wheels start to shimmy in the field, or on the road.
- Increase the spring pressure on the brake to stop the castor wheels from shimmying in the field or on the road.

NOTE: Do not overtighten the springs. Excessive spring pressure will prevent wheels from castoring.

Maintenance

5.12 TIRE SPECIFICATIONS

AIRSEEDER	FRONT	REAR
6130	(1) 16.5 x 16.1 6 ply tubeless @ 24 p.s.i.	(2) 16.5 x 16.1 6 ply tubeless @ 24 p.s.i.
6180	(1) 21.5 x 16.1 6 ply tubeless @ 24 p.s.i.	(2) 21.5 x 16.1 6 ply tubeless @ 24 p.s.i.
6240	(2) 21.5 x 16.1 6 ply tubeless @ 24 p.s.i.	(2) 23.1 x 26 All Weather Tire 8 ply tubeless @ 20 p.s.i.
6240 (Optional)	(2) 21.5 x 16.1 6 ply tubeless @ 24 p.s.i.	(2) 23.1 x 26 Rice Tire 10 ply tubeless @ 20 p.s.i.
6300	(2) 21.5 x 16.1 10 ply tubeless @ 28 p.s.i.	(2) 23.1 x 26 All Weather Tire 12 ply tubeless @ 28 p.s.i.
6300 (Optional)	(2) 21.5 x 16.1 10 ply tubeless @ 28 p.s.i.	(2) 23.1 x 26 Rice Tire 10 ply tubeless @ 20 p.s.i.

5.13 AIR LEAKS ON AIRSEEDERS

It is imperative that no air leaks occur in the air seeder tank as even the smallest air leak from the lid will lead to material bridging in the tank thereby causing misses in the field.

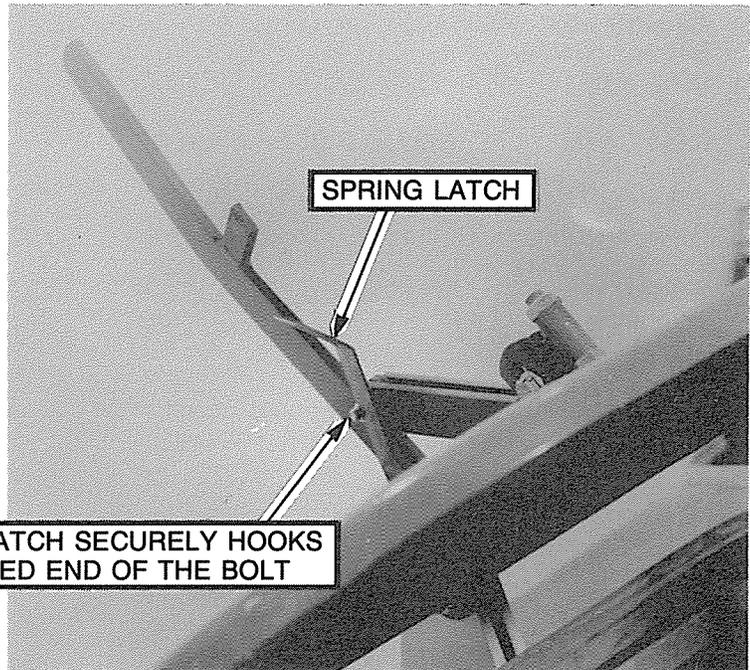
To prevent this from occurring, it is strongly recommended that a pressure test be conducted prior to seeding time. This can be performed very easily and simply by completing the following steps:

- Disconnect the 2 1/2" diameter primary hoses from the rear of the cultivator at the primary hose coupler(s) by loosening the four 3/8" bolts.
- Install the blank off plate that is supplied with the Airseeder at each coupler and retighten the 3/8" bolts. If the blank off plates are not readily at hand a piece of cardboard can be used in its place.
- Once the blank off plates have been installed, start the fan and run at maximum speed. With the fan running at maximum speed, check the following areas for air leaks: tank clean-out doors; rear clean-out doors of the metering body; collector assembly seals; and tank lids.
- If any of the above areas leak, remove the parts to check the seal. Replace, if necessary. Ensure upon reassembly that the parts are tightened sufficiently to prevent air leakage.
- Remove the blank off plates before using the Airseeder.

NOTE: Use the spring scale provided with the machine to check the tank lid opening force. With the lid closed place one end of the scale one inch from the end of the tank lid lever. Pull straight up on the scale and note the maximum force it takes to open the lid. The force needed to open the lid **must be greater than 65 lbs.** Adjust the tank lid adjusting bolt as necessary. The lid lever should close with a **snap**. This will ensure that the lid is sufficiently tight and prevent any leaks.

5.14 CHECK SPRING LATCH OPERATION

- Open Lid fully.
- The rear bolt of the Lid Linkage should hook on the Spring Latch.
- If the Spring Latch does not hook on the bolt check the following and make corrections:
 - Ensure bolt is installed correctly.
 - Bolt worn or is too short, replace if required.
 - Ensure Spring Latch is installed correctly.
 - Spring Latch bent.



WARNING

While entry into the tank is **not** recommended, if an individual does enter the tank, another person must be present and the lid should be properly adjusted with the lid seal in place. The lid adjustment procedure is described in Section 5.7 of the Operator's Manual.

6 Troubleshooting

Problem	Cause	Correction
Excessive Front Castor Wheel Shimmy 6240 & 6300 only	Insufficient Brake Pressure	Increase Brake Pressure.
Front Castor Wheel Will Not Castor 6240 & 6300 only	Excessive Brake Pressure	Reduce Pressure On The Brake.
Delivery hoses plugged	Insufficient air flow	Speed up fan Seed boots restricting air flow Clean fan intake screen.
	Flow to hydraulic motor Low hydraulic pressure	Speed should be maximum of 5000 R.P.M. increase flow. Check hydraulic pressure min. 2100 p.s.i.
	Seed boots plugged. with dirt	Clean seed boots. Always have tractor moving forward when lowering cultivator in the ground. Raise cultivator when turning sharp. Sweeps worn out.
	Pulleys loose on shaft ENGINE DRIVE ONLY	Properly fix pulley to shaft.
	Broken fan belts ENGINE DRIVE ONLY	Replace belts. Ensure fan is rotating clockwise facing the impeller.
	Loose fan belts	Tighten fan belt adjusting springs.
	Hose obstruction	Remove obstruction from hose.
	Air delivery hose partly off manifold	Re-install hose properly on manifold.
	Kinked hoses	Straighten hoses and properly secure them to framework.
	Obstruction in divider head	Check hoses and clear obstruction from appropriate outlets - be sure to use appropriate screens when filling.
Exceeding machine's delivery capabilities	Exceeding machine's delivery capabilities	Slow down ground speed and speed up fan.
	Poorly mounted hoses	See set-up section 7.63 for proper hose set-up.

6 Troubleshooting

Problem	Cause	Correction
Plugged boots	Backing up with openers near or in the ground	Lift machine all the way up before backing up.
	Turning very sharp with openers near or in the ground	Lift machine all the way up when making sharp turns.
	Lowering machine without any forward motion	Always have forward motion when lowering machine.
	Worn openers or sweeps	Replace openers.
	Severely bent or damaged boots	Straighten or replace as required.
Clutch slipping	Low power supply	Ensure good connections at the power supply. Battery voltage must be 12V.
	Faulty clutch	Replace clutch.
Material not being metered out	Metering clutch not engaged	Engage Switch in tractor cab.
	Main drive chain not installed	Install drive chain properly on Drive Sprocket. See Operation Section.
	Drive chain or chains broken	Install new chain. Ensure connecting link is installed correctly. Curved part of spring clip should face the direction of chain travel.
	Sheared roll pin on coupler	Replace with new roll pin.
	Massive air leak in tank, resulting in material being blown up out of the metering cup	Repair the air leak.
	Key sheared on metering wheel	Change metering wheel and check for cause of metering shearing.
	Collector bottom installed incorrectly	Be sure to install with arrows in same direction as on collector.
	Material caked up in tank	Remove material and completely clean out the tank.
Excessively wet material in tank	Remove wet material and use reasonably dry material.	

Troubleshooting

Problem	Cause	Correction
Material not being accurately metered out of the metering body	Air delivery hoses loose, cracked or pulled off	Tighten the hoses, replace cracked hoses or install hoses pulled off their respective locations.
	Inlet screen to fan blocked off	Clean off material that is blocking the fan screen.
	Damaged fan impeller	Replace impeller.
	Slider plate adjusted incorrectly	Adjust sliders so they are all the same for the product being metered. See operation Section for correct clearances.
	Material caked up above one or more of the metering cups	Clean out caked up material.
	Excessively damp material in tank	Use reasonably dry, fresh material only.
	Foreign obstruction in tank above metering wheels	Remove obstruction, and always fill tanks through the screens.
	Caked up metering wheels on some or all of the metering cups	Clean out the metering cups and wheels.
	Damaged metering wheels	Replace broken metering wheels.
	Bottom collector door installed incorrectly	Install door with arrows in same direction as collector.
	Dual shooting hoses not routed correctly	See Section 7.7
	Metering wheels mismatched to secondary outlet	Install correct wheels to head. 1 3/4" wide wheel for 7 head 2" wide wheel for 8 head 2 1/4" wide wheel for 9 head 2 1/2" wide wheel for 10 head Be sure appropriate spacers are also used.
	Incorrect machine size sprocket	Install correct sprocket on back of transmission. See Section 7.6.
Crank rotated wrong way when taking sample	Crank must be rotated counter clockwise.	

Troubleshooting

Problem	Cause	Correction
Material flowing thru system when unit is stationary and the fan running.	Damaged metering wheel.	Replace metering wheel.
	Pressurization hose inside tank disconnected or broken.	Install or replace pressurization hose.
Material not being divided in distribution head	Head partially blocked	Remove blockage and re-install hose.
	Kinked hose running to shank	Straighten or replace hose.
	Damaged distribution section on head	Replace head with new one.
	Bent or damaged diffuser pipe	Straighten or replace diffuser pipe.
Engine stops or lacks power	Dirt in fuel line Dirty Air filter element	Replace fuel filters. Clean filters as outlined in Maintenance Section 5.
	No fuel or improper fuel	Use regular or preferably unleaded gasoline.

Troubleshooting

Problem	Cause	Correction
Engine will not start or is hard to start	Faulty spark plugs	Replace.
	High temperature	Clean air screen and cooling fins. See Maintenance Section 5.
	Low oil pressure	Incorrect oil level.
	Dirt in fuel lines	Replace fuel filters.
	Dirty air filter elements	Clean filter as outlined in Maintenance Section.
Engine knocks or pings, operates erratically, skips, backfires, misfires or overheats	No fuel or improper fuel	Use regular or preferably unleaded gasoline.
	Faulty spark plugs	Replace
	Dirt in fuel filter	Replace fuel filter.
	Dirty Air filter elements	Clean filter as outlined in Maintenance Section 5.
	Faulty Spark Plugs	Replace.
High fuel consumption	Incorrect oil level	Add oil.
	Dirty Airscreen and/or cooling fins	Clean as outlined in Maintenance Section 5.
	Dirty Air Filter elements	Clean filter as outlined in Maintenance Section 5.
Hydraulic fan will not turn	Selector valve in wrong position	Switch the selector to fan position.

6.1 TROUBLE SHOOTING GUIDE FOR MONITOR

The problems with agricultural electronics are usually mechanical. Problems with the harness connections and sensors are the most common. It goes without saying that the first things to check are the harness and its connections. Instruments such as digital or analogue multimeters are a real asset in finding problems, but a great deal can be done without one.

6.2 DISPLAY TEST

Every time the monitor is turned on, the monitor turns on all segments of the display. The test lasts a few seconds before the monitor begins normal operation. The display must read (1888.8).

Troubleshooting

6.3 CHECKING HARNESSSES

The first thing to do is check for the obvious things like broken connections, loose terminals, insulation rubbed off and so forth. You may take the connector shells off to see if any wires have worked loose. If you have an ohm meter, or a battery and a light bulb, you can easily check that both ends of the wires are connected to each other like they should be. You can also check to see if a wire is shorted to its neighbours. The only wires that should be shorted together are signal grounds. They are all connected to pin four.

6.4 CHECKING BIN LEVEL SENSORS

If only one bin level sensor is giving problems, you can swap the front and rear bin sensors. If the problem moves, it is a bad sensor. If the problem stays where it was, it is a bad harness.

Another option is to disconnect the sensor and connect and disconnect the wires to each other. This simulates the action of the sensor. Wires connected should indicate a full bin. Wires disconnected should indicate an empty bin. If this does not work it is probably a bad harness.

Note that the monitor takes 15 seconds to respond to a change on a bin level input.

6.5 CHECKING REED SWITCH SENSORS

These sensors are used on slowly revolving shafts, in this case the meters and ground speed.

These sensors can be checked with an ohm meter. Connect the meter across the sensor terminals. Rotate the actuating magnet past the sensor. If the switch is working, the meter will bounce between zero and infinite ohms. If the switch does not work, make sure the gap between switch and sensor is small enough. A gap of .125 inch is recommended.

If the switch works, but the monitor does not give a reading, it is probably a bad harness.

6.6 CHECKING VARIABLE RELUCTANCE SENSORS

These sensors are used on high speed shafts, in this case, the fan.

These sensors are a bit difficult to test because their output signal is low and depends on the shape and speed of the target. Fortunately they are very reliable. The best that can be done is check them with an ohm meter. The reading should be 500 - 1000 ohms. Extreme readings, such as zero or infinity, mean you have a bad sensor.

Target to sensor gap is critical with these sensors. The gap should be as small as is reasonable under the circumstances, preferably no larger than .125 inch.

Problem	Cause	Correction
Monitor lights up but does not seem to work	Bad monitor	Replace monitor.
	Completely disconnected harness	Connect harness.

Troubleshooting

Problem	Cause	Correction
No fan display	Incorrect gap between sensor and target	Gap should be 1/8" or less.
	Bad sensor	Replace sensor.
	Broken or shorted wire	Replace or repair harness.
No ground speed display	Broken or shorted wire	See above.
	Sensor to magnet gap too large.	
	Bad sensor	
No meter speed display	Broken or shorted wire	See above.
	Sensor to magnet gap too large	
	Bad sensor	
No display, no back light	Switched off	Switch unit on.
	Bad power connections at the battery	Ensure good connections.
	Bad fuse	Replace fuse.
	Battery below 8 volts. Temperatures below -10 or above +40C	Check battery voltage.
Bin indicates always full	Blocked light beam on photoelectric sensor.	Remove object blocking the beam.
	Wire shorted to ground	Repair or replace wire.
	Bad sensor	Replace sensor.
Bin indicates always empty	Broken wire	Repair wire.
	Bad sensor	Replace sensor.
	Wires not hooked to sensor	Hook up correctly.
Blown fuse	Power hooked up backwards	Hook up correctly. RED to positive terminal.

7 Setup

Read all set-up instructions and study all photographs thoroughly before attempting to assemble the unit.

LEFT AND RIGHT is determined by standing behind the machine looking to the front.

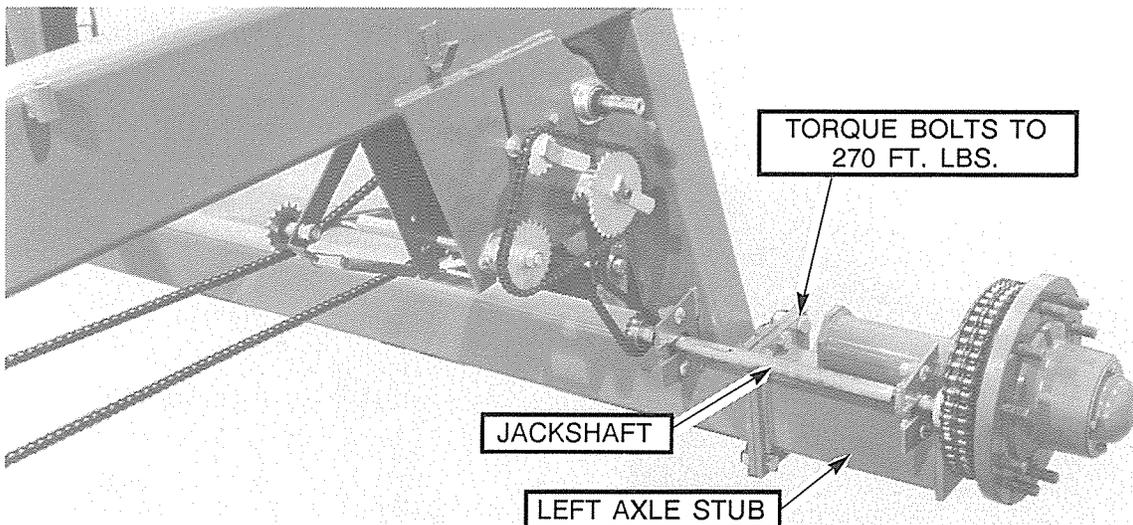
7.1 MOUNTING WHEELS TO CART

- (1) Block frame so that rear member is 20" above the ground surface and the front castor wheel pivot point is 53" above the ground surface.



CAUTION! TO PREVENT PERSONAL INJURY, ENSURE FRAME IS STABLE AFTER BLOCKING.

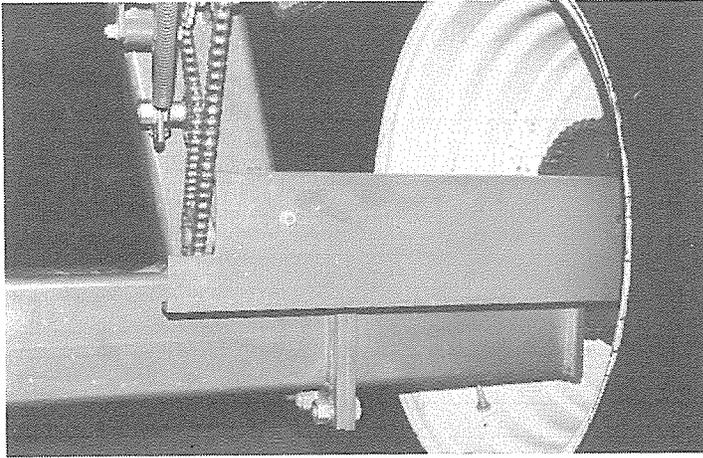
- (2) Fasten axle stub to airseeder frame with seven - 3/4" x 2" bolts, lockwashers & nuts. Torque bolts to 270 ft. lbs.'
- (3) Install the axle hub assembly with the large sprocket bolted to it on the L.H.S. of the machine using the 1/2" x 3/4" bolt and Locknut.
- (4) Loosen locking collars and bolts on the main ground drive jackshaft.



- (5) (a) Install the double #60 roller chain 40 links long on the wheel hub sprocket.
(b) Ensure that the jackshaft sprocket aligns with the wheel hub sprocket and chain.
- (6) Once sprockets are aligned, tighten bearing mount bolts then tighten locking collars on the jackshaft.
- (7) Align the inner 15 tooth sprocket so it lines up with clutch sprocket.
- (8) Install the guard as per photo.

Setup

7.1 MOUNTING WHEELS TO CART (Continued)

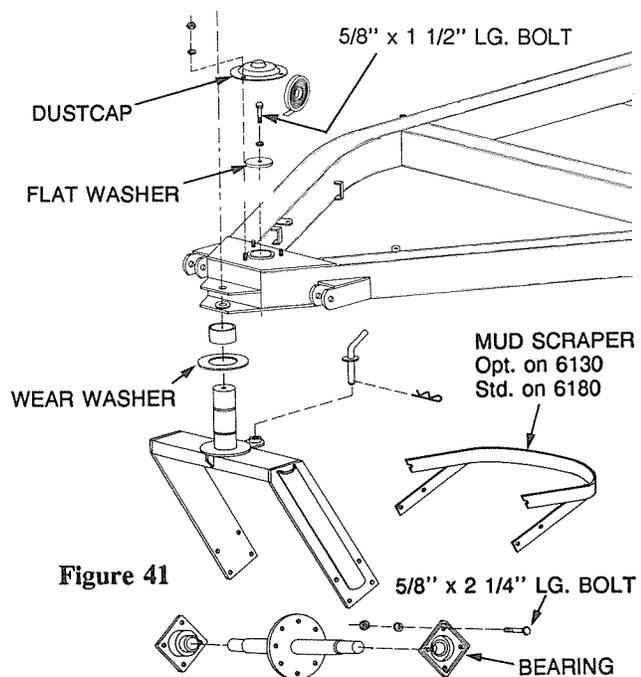


Guard Over Jackshaft
6240/6300 Shown

- (9) Install the other wheel hub assembly to the R.H.S. of the machine using the 1/2" x 3 3/4" LG. bolt and Locknut.
- (10) Install tires and rims to both rear hubs. (See page 5.10).
- (11) Torque wheel bolts to **150 ft. lbs.**

7.2 CASTOR WHEEL INSTALLATION (6130 & 6180 Only)

- (1) Mount the tire and rim to the castor axle using 5/8" 18 UNF tapered wheel nuts and jam nuts. **Torque to 150 ft. lbs.**
- (2) Install lock collars and bearings onto the axle.
- (3) (a) Mount castor fork to the axle bearings using 5/8" x 2 1/4" long bolts and install mud scraper if unit is equipped with this option. Torque to **150 ft. lbs.**
(b) Tighten bearing locking collars to shaft.
- (4) Place wear washer onto pivot shaft.



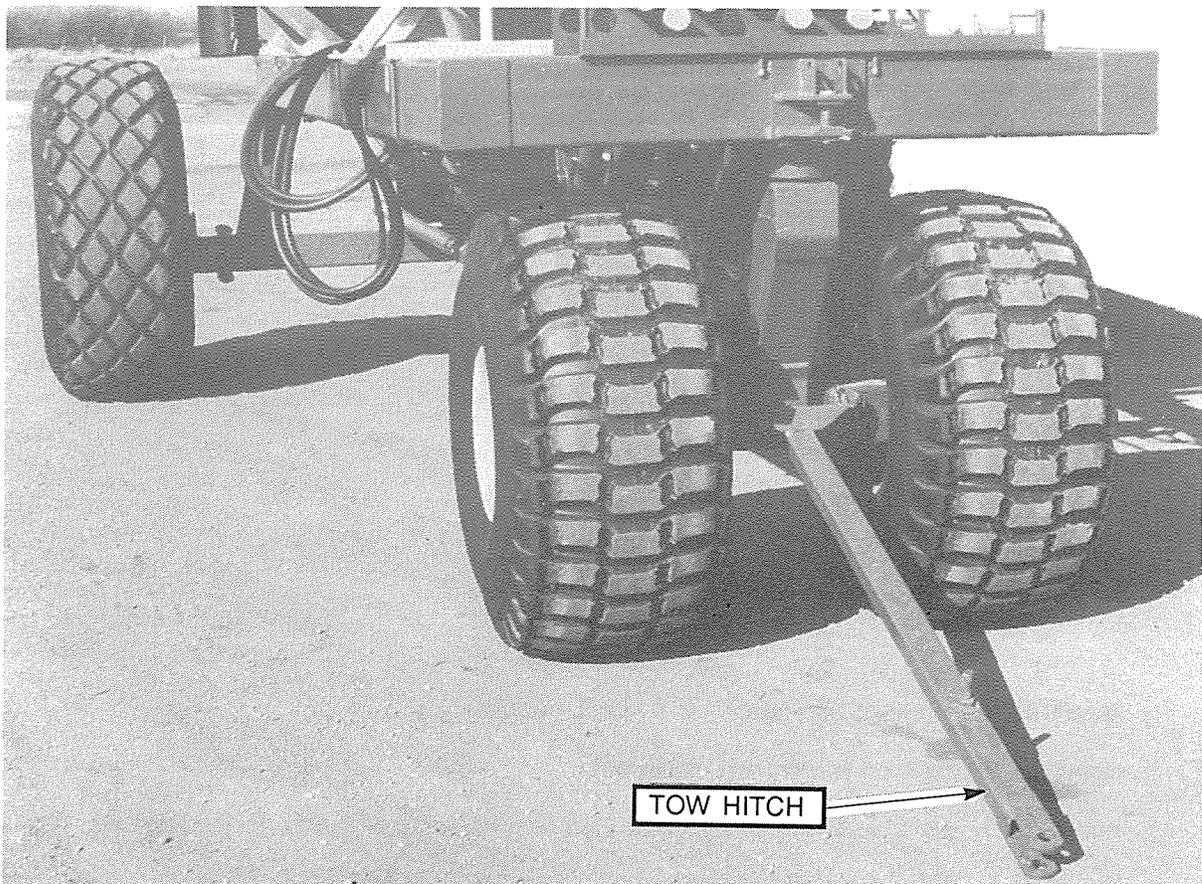
7.2 CASTOR WHEEL INSTALLATION (Continued)

- (5) Remove dust cap.
- (6) Install castor fork into front of frame.
- (7) Install large washer onto the top of the pivot shaft using a 5/8" x 1 1/2" bolt with Lockwasher.
- (8) Install weather strip under dust cap and assemble dust cap.
- (9) **Grease pivot shaft thoroughly.**

Once all wheels are assembled remove blocking and lower airseeder to the ground. Block tires to prevent personal injury while working around the Airseeder.

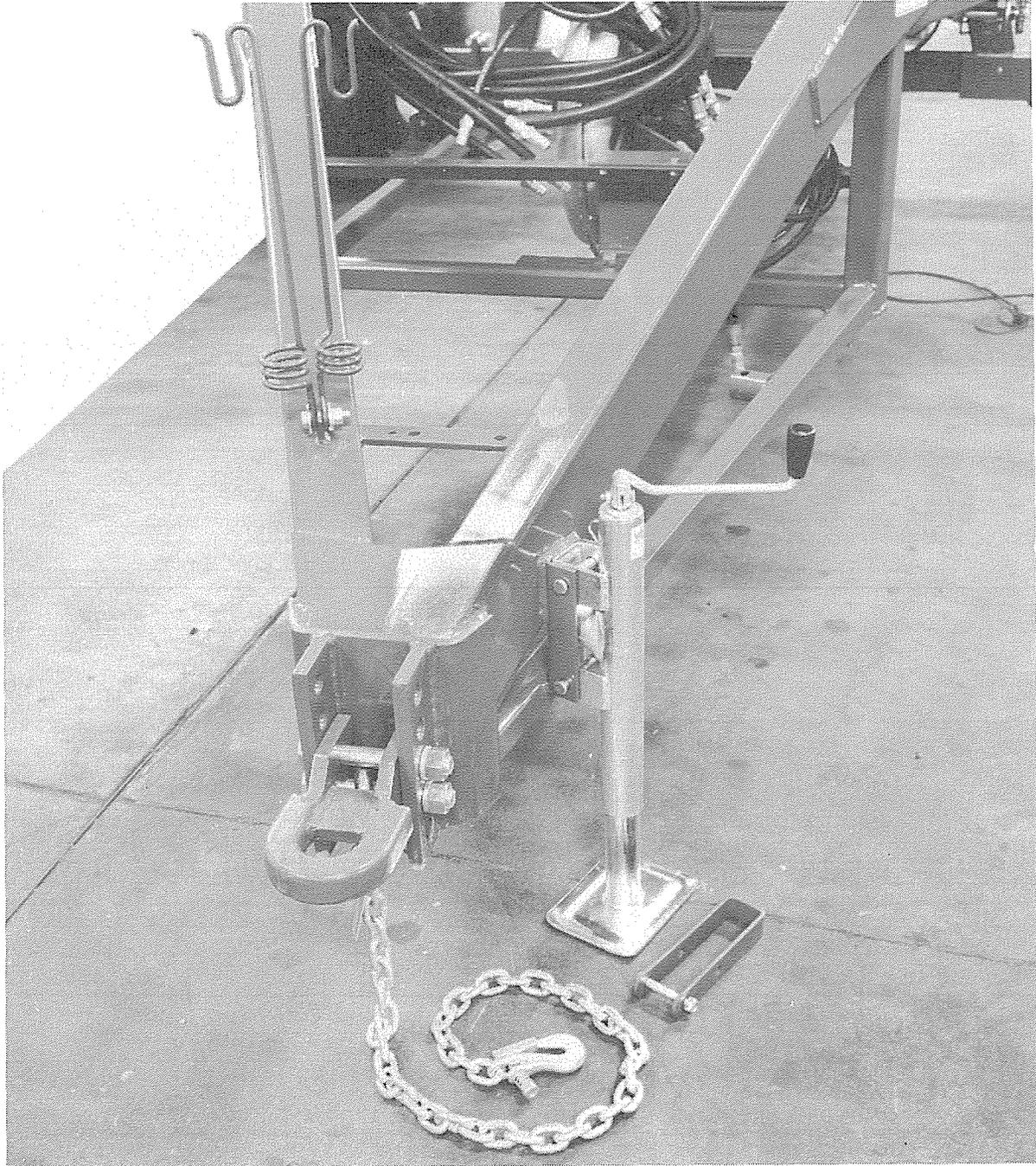
7.2.1 CASTOR WHEEL INSTALLATION (6240 & 6300 Only)

- (1) Install two axle hub assembly to the castor fork using a 1/2" x 3/4" bolt and locknut.
- (2) Install tires and rims to both hubs (See page 5.10).
- (3) Torque wheel bolts to **150 ft. lbs.**
- (4) Attach tow hitch to castor fork using two 1" x 2 1/4" pins. Retain pins with klik-pins.



Setup

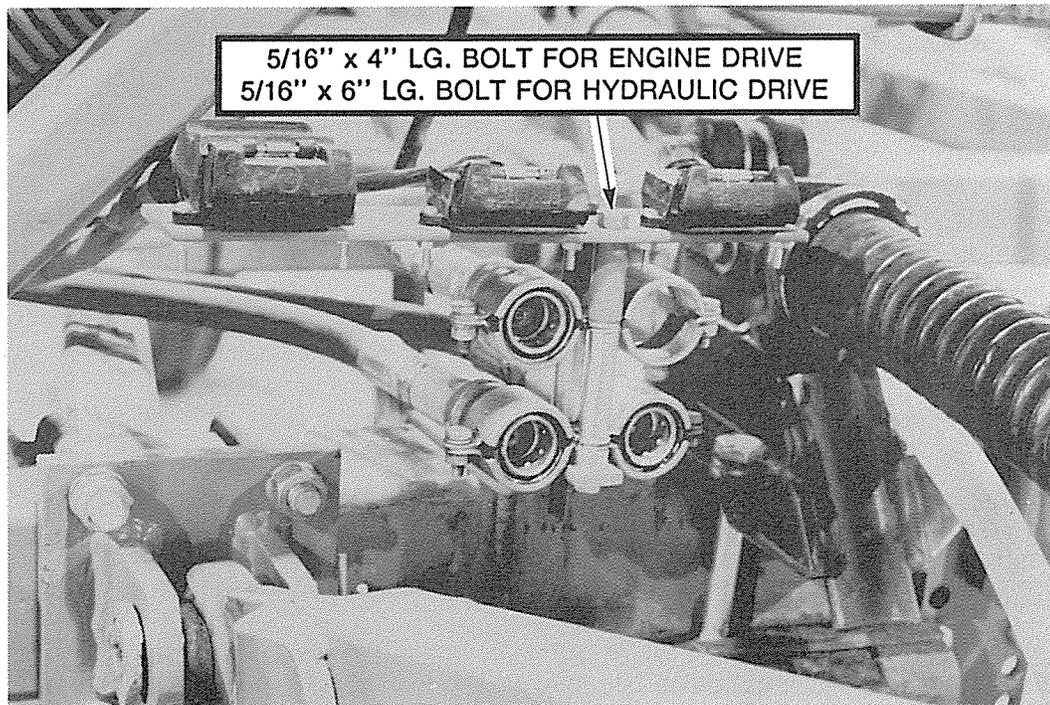
7.3 AIRSEEDER HITCH ASSEMBLY (Tow Between)



- (1) Mount the hitch clevis with two 1" x 7" bolts, lockwashers & nuts.
- (2) Install safety chain on lower hitch clevis bolt.
- (3) Attach the hose holders with a 1/2" x 2" bolt, two-flatwashers & 1/2" lockwasher nut.
- (4) Mount hitch jack to hitch with two - 5/8" x 3-3/4" pins and hair pins.

7.3 AIRSEEDER HITCH ASSEMBLY (Tow Behind)

- (1) The Hitch Tubes must be attached so that they pull through the centre line of the cultivator.
- (2) Mount the Hitch Pole, pull brackets no more than **30 inches** either side of the cultivator centre line. Ensure that they do not interfere with trips and harrow mounting hardware. See below and schematics in Section 7.6.6.
- (3) See Section 4.1 - 4.3 for Hitch Hookup.
- (4) Install mounting plate for hydraulic couplers and clutch harness connectors with 3/8"x 5" lg bolt.
- (5) Install hydraulic couplers and harness connectors as shown.

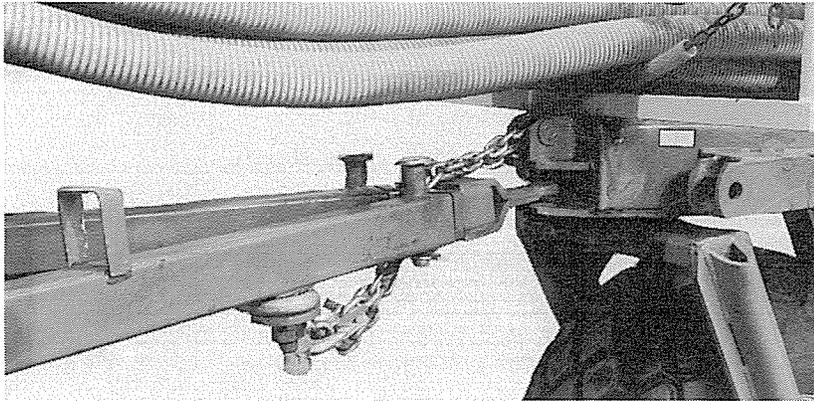


Setup

7.4 SAFETY CHAIN INSTALLATION

Install the Safety Chain provided as shown using 1 1/16 ID washer and 1" lock nut on the hitch pole and the 1 1/8 x 3 11/16 long pin and hairpin for the airseeder.

The chain is connected 4 links from the large link.



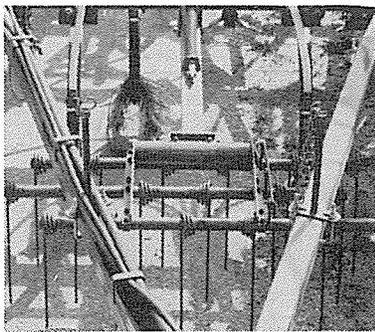
7.5 HYDRAULIC HOSE CONNECTION (for both engine and hydraulic drive)

- (1) Run the monitor and clutch wires through the loops provided on the L.H.S. HITCH POLE on the Airseeder then run the hydraulic hoses through the same loops.
- (2) Install the hydraulic quick couplers onto the L.H.S. Hitch pole - pull - bracket mounted to the cultivator.
- (3) Run the hydraulic hoses, monitor wire and clutch wire down a L.H.S. frame member and down the L.H.S. Hitch pole of the cultivator.
- (4) Use tie straps to hold the hoses and wiring harness to the frame members.

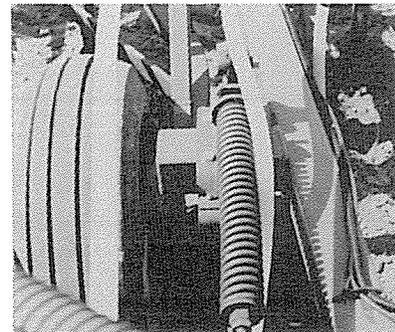
NOTE: THE 3/8 DIAMETER HOSE MUST BE RUN DIRECTLY INTO THE HYDRAULIC TANK OTHERWISE DAMAGE WILL OCCUR TO THE SEAL IN THE MOTOR. IF THE HOSE IS RUN THROUGH THE FILLER CAP THEN ENSURE THE CAP IS VENTED. A QUICK COUPLER CAN STILL BE USED BETWEEN THE TRACTOR AND THE CULTIVATOR.



Cable Routing On
Airseeder Hitch



Cable and Hose Routing
on Airseeder Hitch

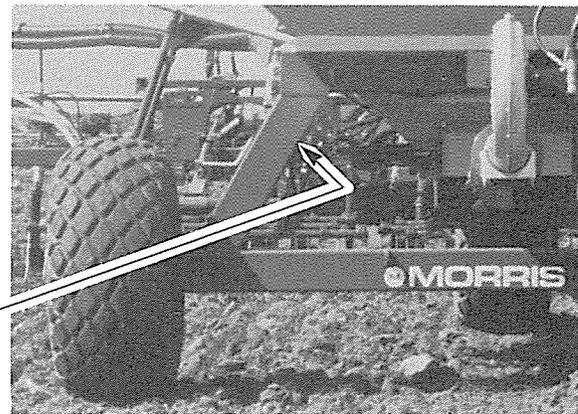
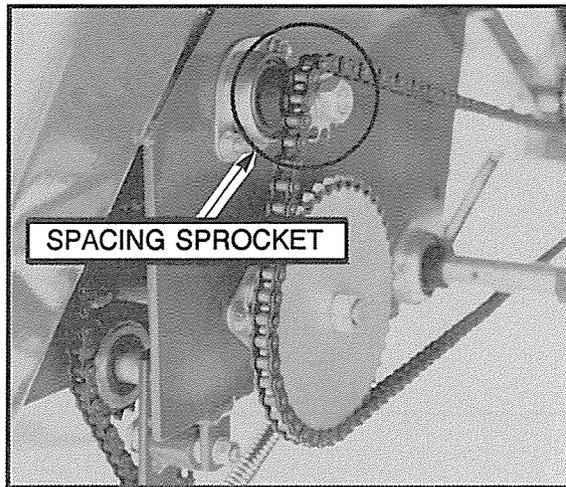


Hose and Cable Routing
Across the Cultivator

7.6 METERING AND DISTRIBUTION FOR SINGLE SHOOTING

Important: Install correct sprocket for the machine spacing.

9 tooth for 7.2" Spacing	10 Tooth for 8" Spacing
9 Tooth for 7.5" Spacing	11 Tooth for 9" Spacing
13 Tooth for 10" Spacing	15 Tooth for 12" Spacing



7.6.1 METERING WHEELS

The metering wheels come in 4 different sizes. Each one matches to a specific distribution head mounted on the cultivator.

IMPORTANT: It is very important that the distribution heads are matched with the correct size metering wheel.

If they are not matched correctly, the distribution accuracy will be adversely affected.

Spacer plates are used to take up the extra space in each metering cup. These spacer plates vary in size according to the size of the metering wheel.

Listed below are the metering wheel and spacer sizes required for the corresponding divider head size.

TABLE 1

Divider Head	Metering Wheel #	Metering Wheel Width	Spacer #	Spacer Width
7 outlet	7	1 3/4"	3	3/4"
8 outlet	8	2"	2	1/2"
9 outlet	9	2 1/4"	1	1/4"
10 outlet	10	2 1/2"	-	-

Setup

7.6.2 METERING WHEEL INSTALLATION

The metering wheels can be installed with the metering body mounted to the Airseeder. Refer to Fig. 42.

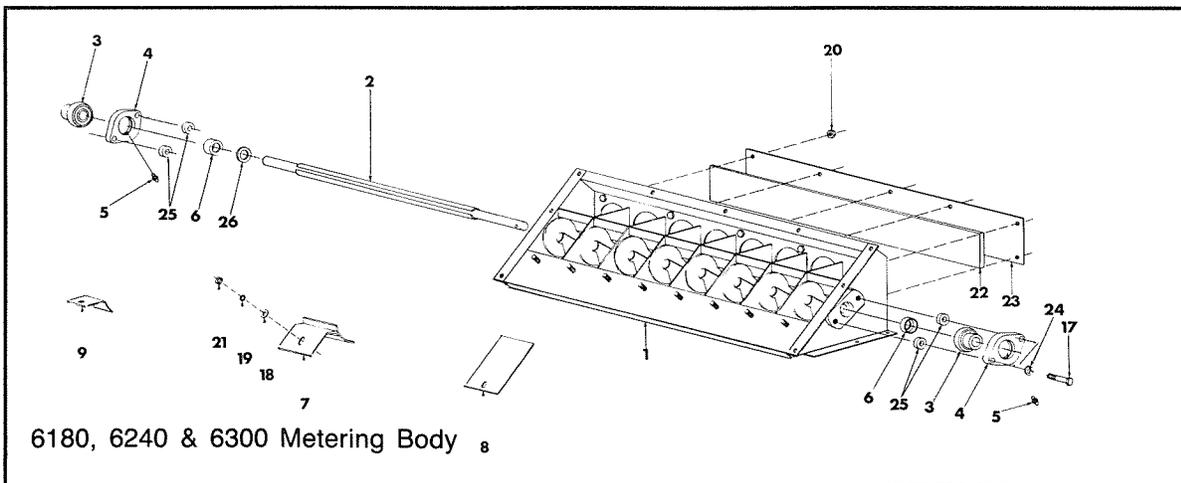
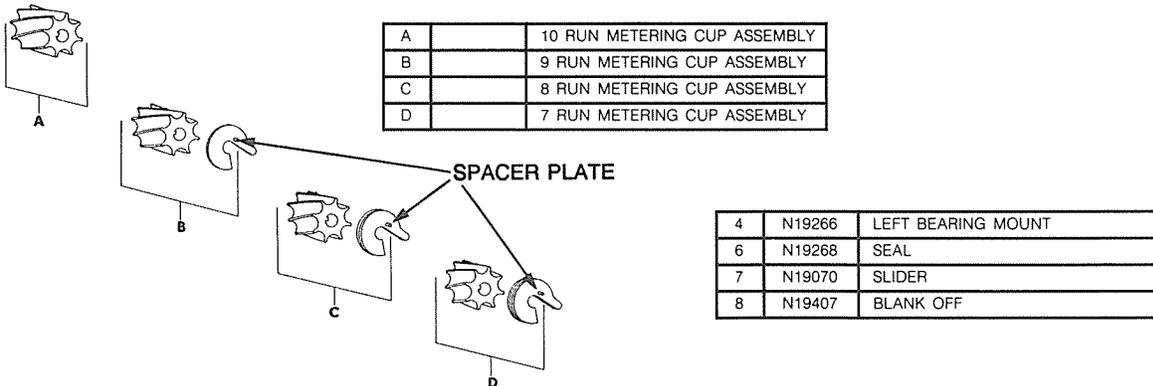
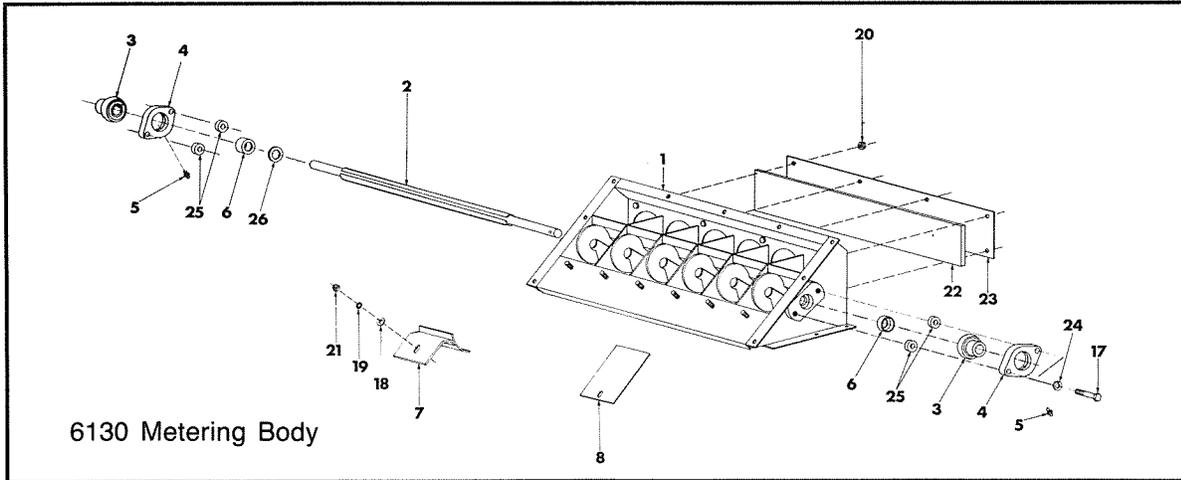
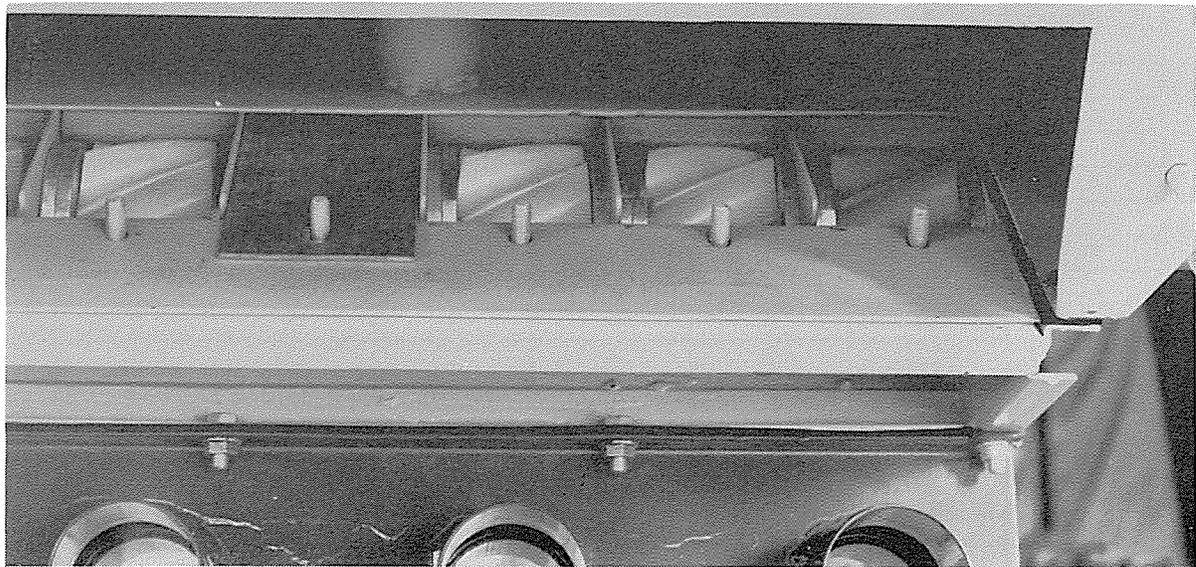


Figure 42

7.6.2. METERING WHEEL INSTALLATION (Continued)

1. Remove the Monitor Donut from the Right Hand Side of the metering body.
2. Loosen the locking collars on the meter shaft bearings.
3. Remove the bolts holding the meter shaft bearings and remove both bearings.
4. Remove the seal and washer from the Right Hand Side of the shaft.
5. Remove the meter shaft from the Right Hand Side.
6. The number of **PRIMARY** runs will determine the specific locations of the metering wheels and blank off plates in the metering body.
The location of each primary run must be the same for both metering bodies. See chart on page 7.8 for the 6130 or 7.9 for the 6180, 6240 & 6300 for metering wheel size and location.
7. **ASSEMBLY HINT:** Mark the metering wheels on the outside of the rib that is next to the key.
8. Smear a **very small** amount of silicone on the pin side of the spacer plates for the 7, 8 and 9 metering cups.

The side with the silicone must be installed against the metering body.



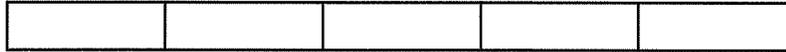
Metering Body With Wheels And Spacers

9. Place all metering wheels and spacers for the particular number of runs required into the metering body. See tables on pages 7.8 for 6130 or 7.9 for the 6180, 6240 & 6300. These tables give the location and size of each wheel for any size of unit.

Setup

7.6.2 METERING WHEEL INSTALLATION (Continued)

Model 6130 - 130 bu. tank. Metering Wheel Size and Location Chart.



Meter Body Looking From The Front When Installed

# RUNS	METER WHEEL SIZE TO BOTH FRONT & REAR METER BODIES					
21	7	*	7	*	*	7
22	7	*	8	*	*	7
23	8	*	7	*	*	8
24	8	*	8	*	*	8
25	8	*	9	*	*	8
26	9	*	8	*	*	9
27	9	*	9	*	*	9
28	10	*	9	*	*	9
29	10	*	9	*	*	10
30	10	*	10	*	*	10
31	8	8	*	*	7	8
32	8	8	*	*	8	8
33	8	8	*	*	8	9
34	9	8	*	*	8	9
35	9	9	*	*	8	9
36	9	9	*	*	9	9
37	9	9	*	*	9	10
38	10	9	*	*	9	10
39	10	9	*	*	10	10
40	10	10	*	*	10	10
41	8	8	*	8	8	9
42	9	8	*	8	8	9
43	9	9	*	8	8	9
44	9	9	*	8	9	9
45	9	9	*	9	9	9
46	10	9	*	9	9	9
47	10	9	*	9	9	10
48	10	10	*	9	9	10
49	10	10	*	9	10	10
50	10	10	*	10	10	10
51	9	9	8	8	8	9
52	9	9	8	8	9	9
53	9	9	8	9	9	9
54	9	9	9	9	9	9
55	10	9	9	9	9	9
56	10	9	9	9	9	10
57	10	9	9	9	10	10
58	10	10	9	9	10	10
59	10	10	9	10	10	10
60	10	10	10	10	10	10

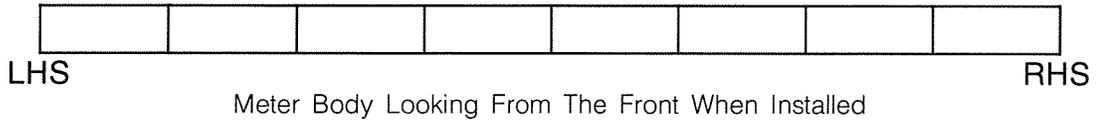
*INSTALL BLANK OFF COVER PLATES

7.6.2 METERING WHEEL INSTALLATION (Continued)

Model 6180 - 180 bu. tank. Metering Wheel Size and Location Chart.

Model 6240 - 240 bu. tank.

Model 6300 - 300 bu. tank.



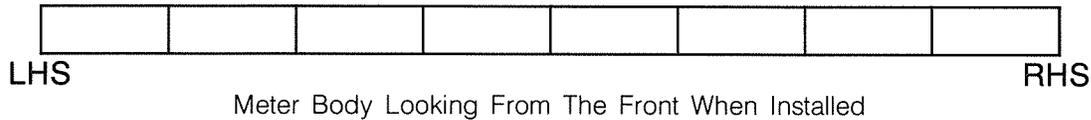
# RUNS	METER WHEEL SIZE FOR BOTH FRONT & REAR METER BODIES							
31	8	8	*	*	*	*	7	8
32	8	8	*	*	*	*	8	8
33	8	8	*	*	*	*	8	9
34	9	8	*	*	*	*	8	9
35	9	9	*	*	*	*	8	9
36	9	9	*	*	*	*	9	9
37	9	9	*	*	*	*	9	10
38	10	9	*	*	*	*	9	10
39	10	9	*	*	*	*	10	10
40	10	10	*	*	*	*	10	10
41	8	8	*	8	*	*	8	9
42	9	8	*	8	*	*	8	9
43	9	9	*	8	*	*	8	9
44	9	9	*	8	*	*	9	9
45	9	9	*	9	*	*	9	9
46	10	9	*	9	*	*	9	9
47	10	9	*	9	*	*	9	10
48	10	10	*	9	*	*	9	10
49	10	10	*	9	*	*	10	10
50	10	10	*	10	*	*	10	10
51	9	9	8	*	*	8	8	9
52	9	9	8	*	*	8	9	9
53	9	9	8	*	*	9	9	9
54	9	9	9	*	*	9	9	9
55	10	9	9	*	*	9	9	9
56	10	9	9	*	*	9	9	10
57	10	9	9	*	*	9	10	10
58	10	10	9	*	*	9	10	10
59	10	10	9	*	*	10	10	10
60	10	10	10	*	*	10	10	10
61	9	9	9	*	8	8	9	9
62	9	9	9	*	8	9	9	9
63	9	9	9	*	9	9	9	9
64	10	9	9	*	9	9	9	9
65	10	9	9	*	9	9	9	10

*INSTALL BLANK OFF COVER PLATES

Setup

7.6.2 METERING WHEEL INSTALLATION (Continued)

Model 6180 - 180 bu. tank. Metering Wheel Size and Location Chart.
 Model 6240 - 240 bu. tank.
 Model 6300 - 300 bu. tank.



# RUNS	METER WHEEL SIZE FOR BOTH FRONT AND REAR METER BODIES							
66	10	10	9	*	9	9	9	10
67	10	10	9	*	9	9	10	10
68	10	10	9	*	9	10	10	10
69	10	10	10	*	9	10	10	10
70	10	10	10	*	10	10	10	10
71	9	9	9	8	9	9	9	9
72	9	9	9	9	9	9	9	9
73	10	9	9	9	9	9	9	9
74	10	9	9	9	9	9	9	10
75	10	10	9	9	9	9	9	10
76	10	10	9	9	9	9	10	10
77	10	10	10	9	9	9	10	10
78	10	10	10	9	9	10	10	10
79	10	10	10	9	10	10	10	10
80	10	10	10	10	10	10	10	10

*INSTALL BLANK OFF COVER PLATES

7.6.2 METERING WHEEL INSTALLATION (Continued)

ASSEMBLY HINT: Mark metering wheel size on the metering body. This will help in connecting the main distribution hose and secondary divider heads.

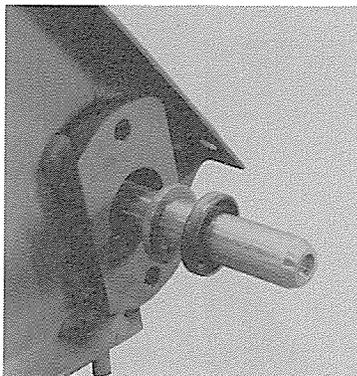
- Align the shaft keyway with the marks on the metering wheels. Slide the metering shaft through the metering wheels.

NOTE: Care must be taken that the key ways are aligned, otherwise damage to the key in the wheels may occur.

- The metering shaft must be pushed through until the shoulder on the shaft hits the side of the metering body.

7.6.2 METERING WHEEL INSTALLATION (Continued)

12. Install the washer on the shaft and into the housing on the R.H.S. of the metering body.

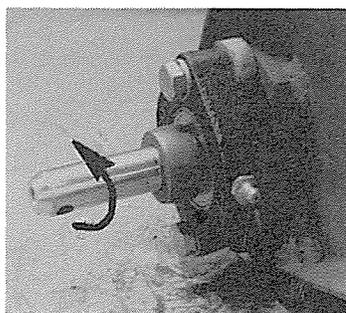


R.H.S. Seal and Washer



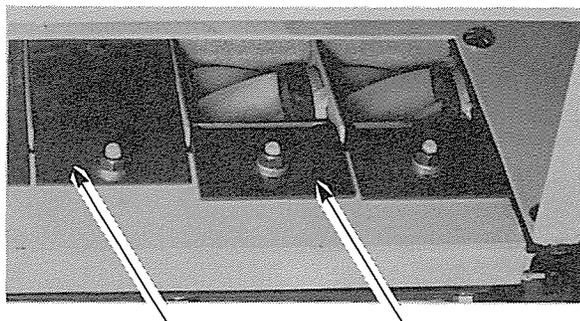
R.H.S. With Seal And Washer Installed

13. **IMPORTANT:** The seal must be installed as shown above. The open side of the seal to the outside. Care must be taken when installing the seal. It is recommended that a brass drift be used to minimize any damage to the seal.
NOTE: The L.H.S. seal is installed at the factory.
14. Reinstall both metershaft bearings and spacers with the grease zerk towards the rear of the machine.



L.H.S. Shown With Shaft Rotation

15. Tighten locking collars by turning the collars in the direction of the shaft rotation. Lock the collar by tapping the collar with a punch in the direction of rotation of the shaft.
16. Re-install monitor Donut on shaft. Ensure Donut is centered to the pick-up. The gap between the pick-up and the Donut must not exceed 1/8". Install the slider plates to all cups with metering wheels.



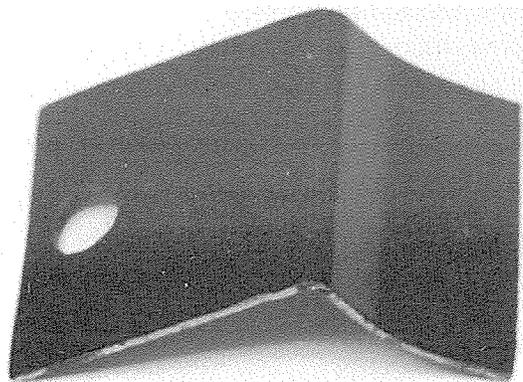
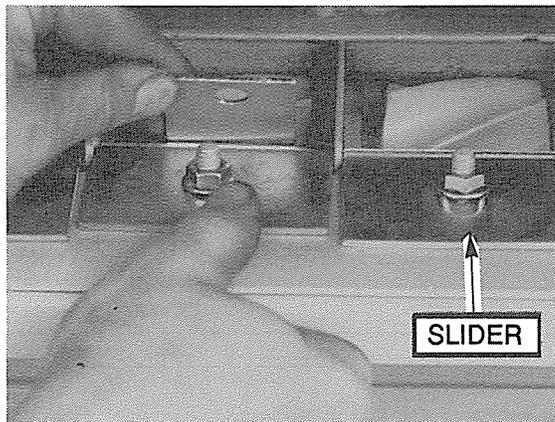
Blank Off Plate and Sliders

NOTE: Install Blank-off covers on cups without wheels. Insert the top of the Blank-off plate under the tank lip. See above.

Setup

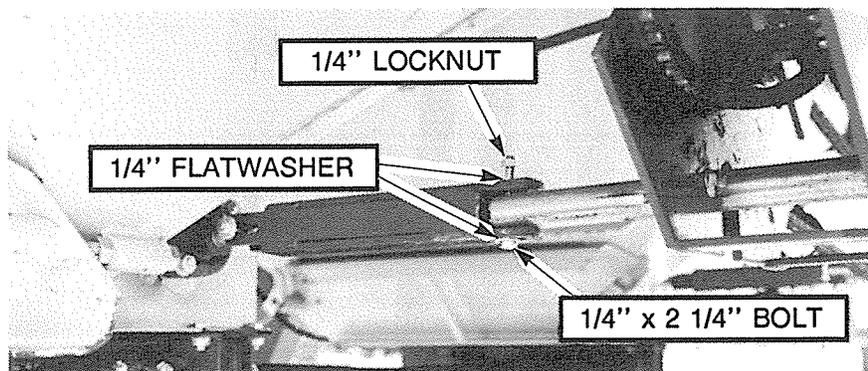
7.6.2 METERING WHEEL INSTALLATION (Continued)

17. Set the sliders with the gauge provided. Tighten sliders with 5/16 stainless steel Nut, 5/16 Lockwasher, 5/16 Flatwasher.



Coarse Seed Gauge

18. Install meter shaft coupler over the meter shaft and transmission Drive shaft.
19. Install the 1/4" x 2 1/4" Lg special bolt with flatwashers and locknuts. Tighten nuts to bottom of threads.



Meter Shaft Coupler Installed

7.6.3 PRIMARY HOSE INSTALLATION - AIRSEEDER ONLY

The Air plenum is supplied with the metering system and should be attached to the fan using the 6" diameter hose clamp.

Connection of hoses from the Plenum to the collector will depend on the number of primary runs used.

(A) For Units using 3 primaries for up to 30 runs, the plenum should be mounted to the fan and the collectors mounted to the metering bodies as shown in Figure 43.

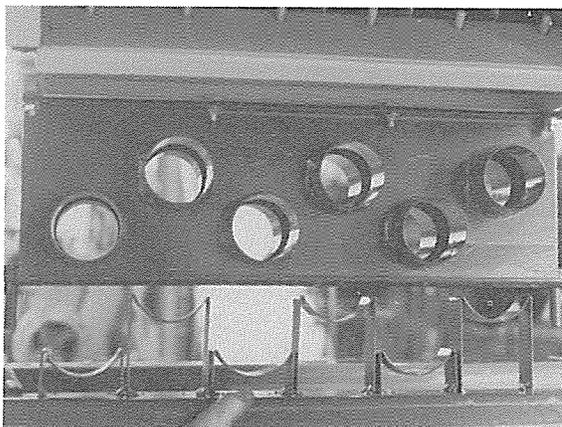
IMPORTANT NOTE: The arrow on the side of the collector **MUST** point in the direction of the Air flow.

Mount the collector to the tank bottom.

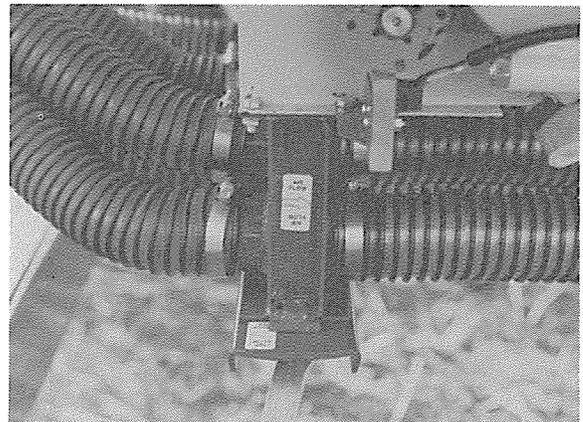
Assemble the collector bottoms to the collector using the large wing nuts.



IMPORTANT! CARE MUST BE TAKEN WHEN INSTALLING THE COLLECTOR BOTTOMS NOT TO DAMAGE THE INSIDE OF THE COLLECTOR.



Collector Bottom Removed



Collector Bottom Installed

CUT 2 1/2" DIAMETER HOSE TO THE REQUIRED LENGTH TO CONNECT THE PLENUM TO THE COLLECTOR.

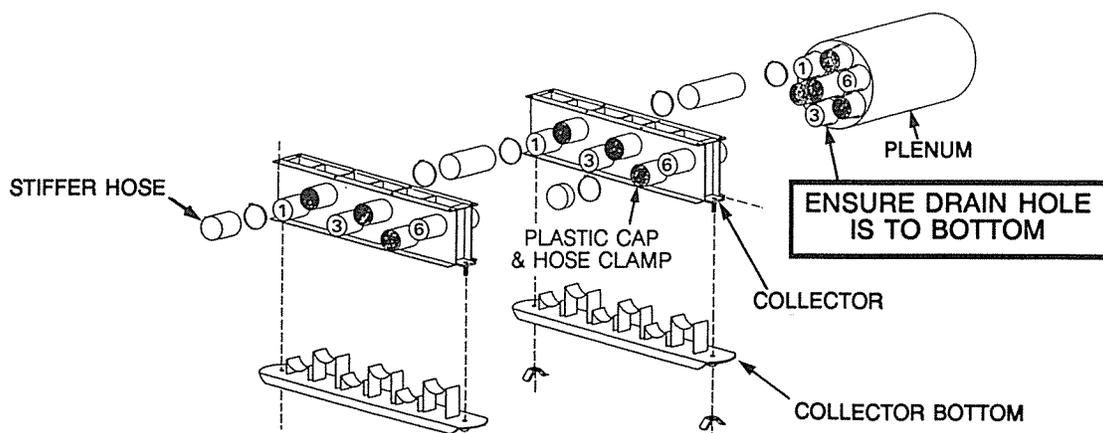


Figure 43

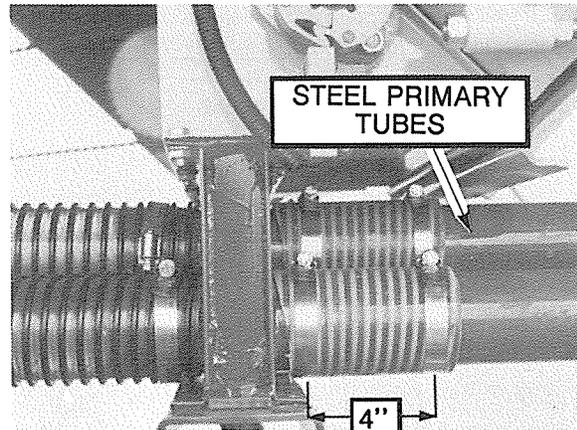
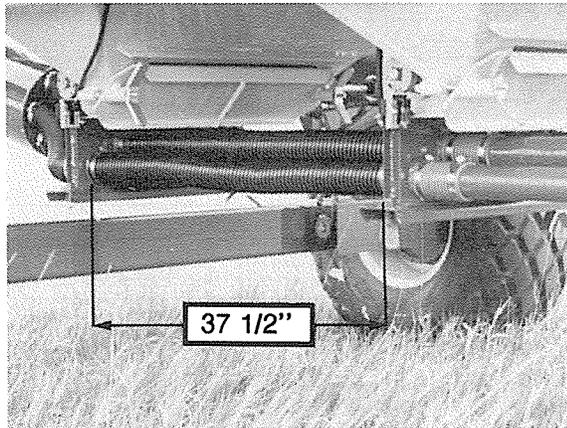
Setup

7.6.3 PRIMARY HOSE INSTALLATION - AIRSEEDER ONLY (Continued)

On 6130 & 6180, cut 3 lengths of 2 1/2" Diameter Hose 37 1/2" long and install between the collectors. On 6240 & 6300, steel tubes are used between the collectors with the 4" stiffer hose shown below.

All UNUSED ports **MUST** be blanked off using a plastic cap and hose clamp.

Ensure all clamps are tight.



Install the 4" cut lengths of 2 1/2" Diameter hose onto the lower end of the steel primary tubes.

NOTE: Use the stiffer style of hose in this position.

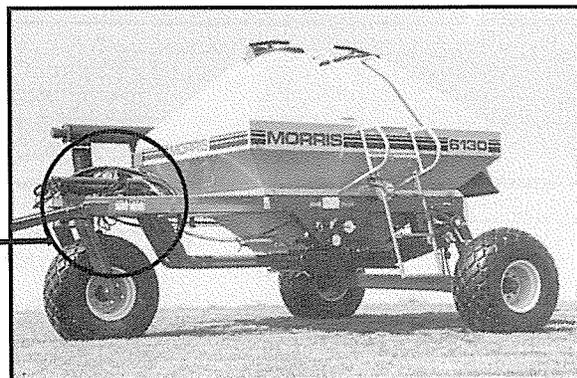
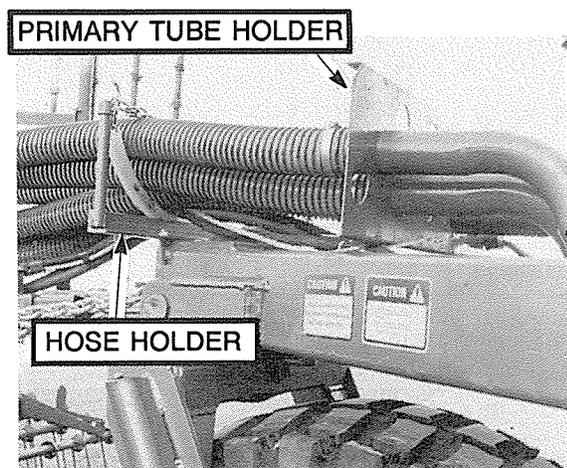
When installing ensure there is a 1" gap between the collector body outlet and the steel primary tube.

Install the front primary hose support onto the Airseeder frame using 2 - 3/8" x 2 1/4" Lg. bolts, 3/8" lockwashers and nuts.

Install the primary tube holder onto the front of the airseeder, using 2 - 3/8" x 1" Lg. bolts, 3/8" lockwashers and nuts.

Insert the bare end of the steel primary tubes into the holder and install the other end onto the respective collector outlets.

Ensure collector outlets and tube holder holes correspond.



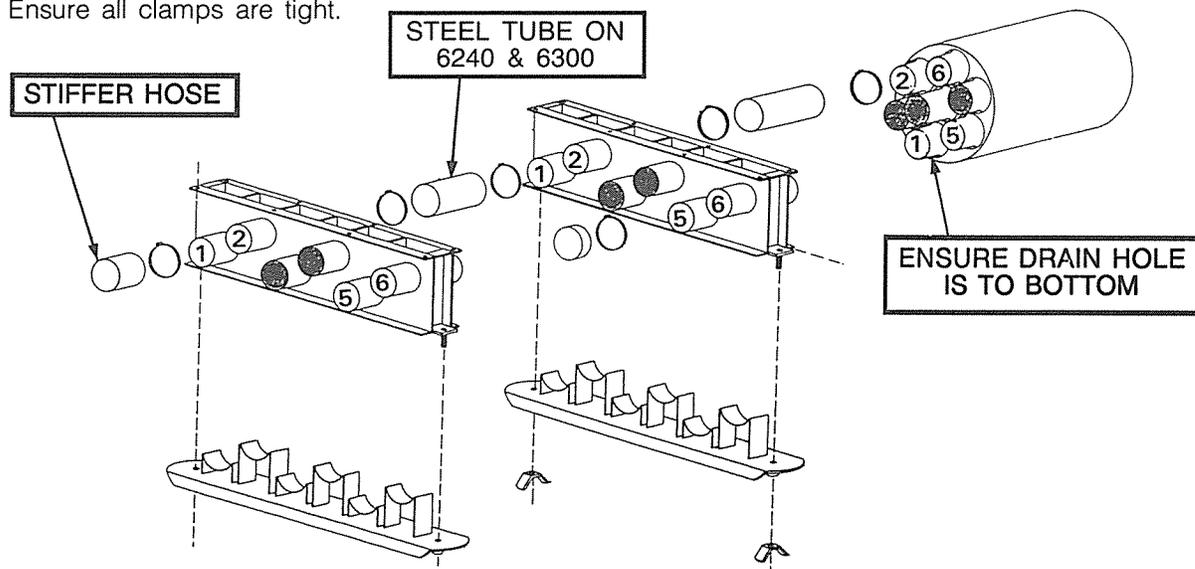
7.6.3 PRIMARY HOSE INSTALLATION - AIRSEEDER ONLY (Continued)

- (B)** Units using 4 primaries, 31 - 40 runs, the same procedure is used as in (A) except the hose connections will be as shown below.

Cut 4 lengths of 2 1/2" Diameter Hose 37 1/2" long and install between the collectors.

All UNUSED ports **MUST** be blanked off using a plastic cap and hose clamp.

Ensure all clamps are tight.



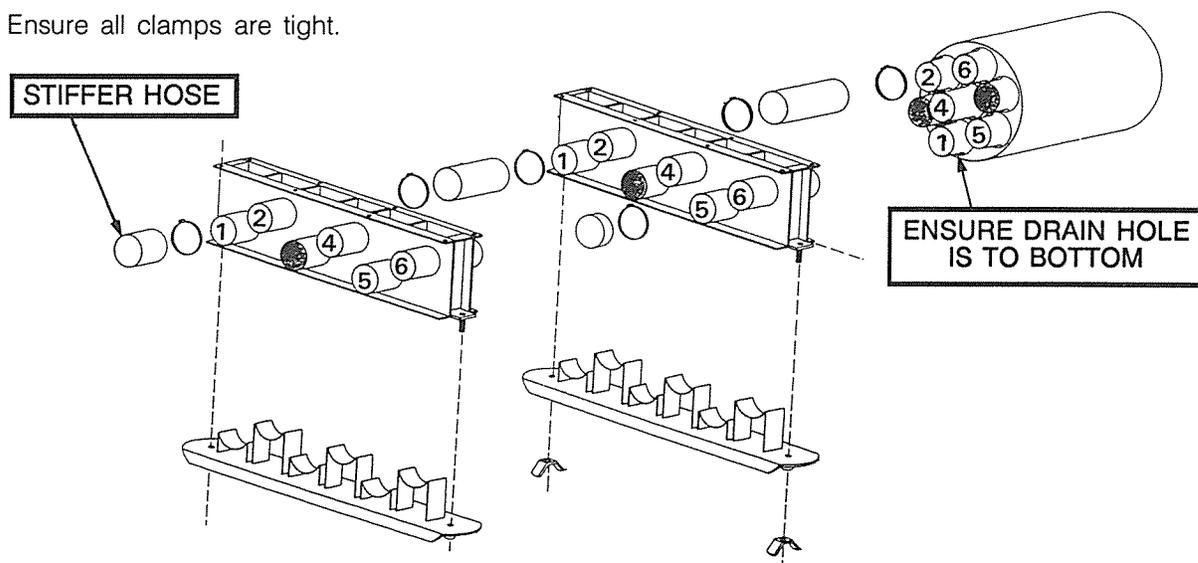
Model 6130 Only

- (C)** Units using 5 primaries, 41 - 50 runs, the same procedure is used as in (A) except that the hose connections will be as shown below.

Cut 5 lengths of 2 1/2" Diameter Hose 37 1/2" long and install between the collectors.

All UNUSED ports **MUST** be blanked off using a plastic cap and hose clamp.

Ensure all clamps are tight.



Setup

7.6.3 PRIMARY HOSE INSTALLATION - AIRSEEDER ONLY (Continued)

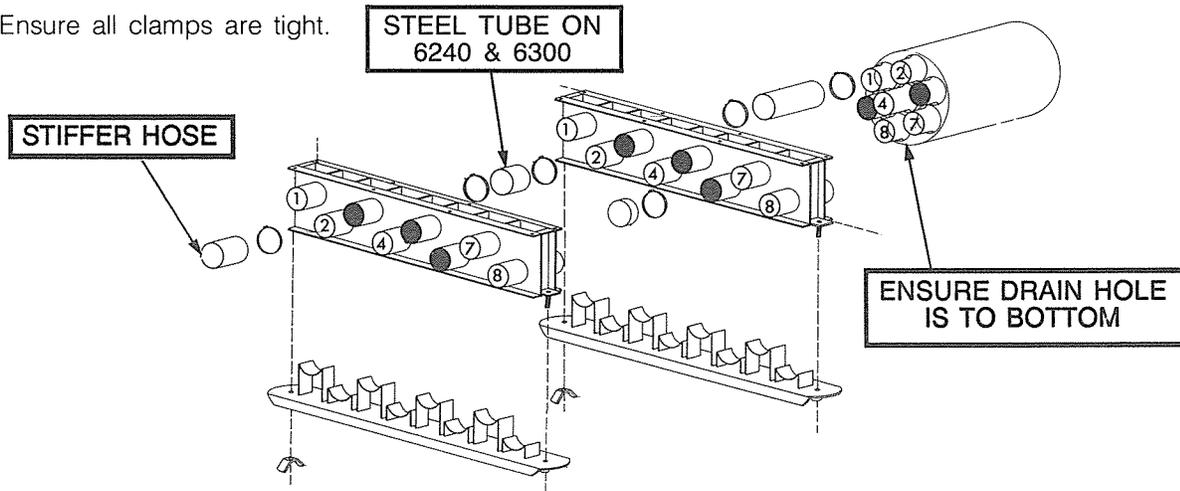
Model 6180, 6240 & 6300 Only

(D) Units using 5 primaries, 41 - 50 runs, the same procedure is used as in (A) except the hose connections will be as shown below.

On 6180, cut 5 lengths of 2 1/2" Diameter Hose 37 1/2" long and install between the collectors. **NOTE:** Use stiffer hose. The 6240 & 6300, use steel tubes with the stiffer hose between the collector bodies.

All UNUSED ports **MUST** be blanked off using a plastic cap and hose clamp.

Ensure all clamps are tight.



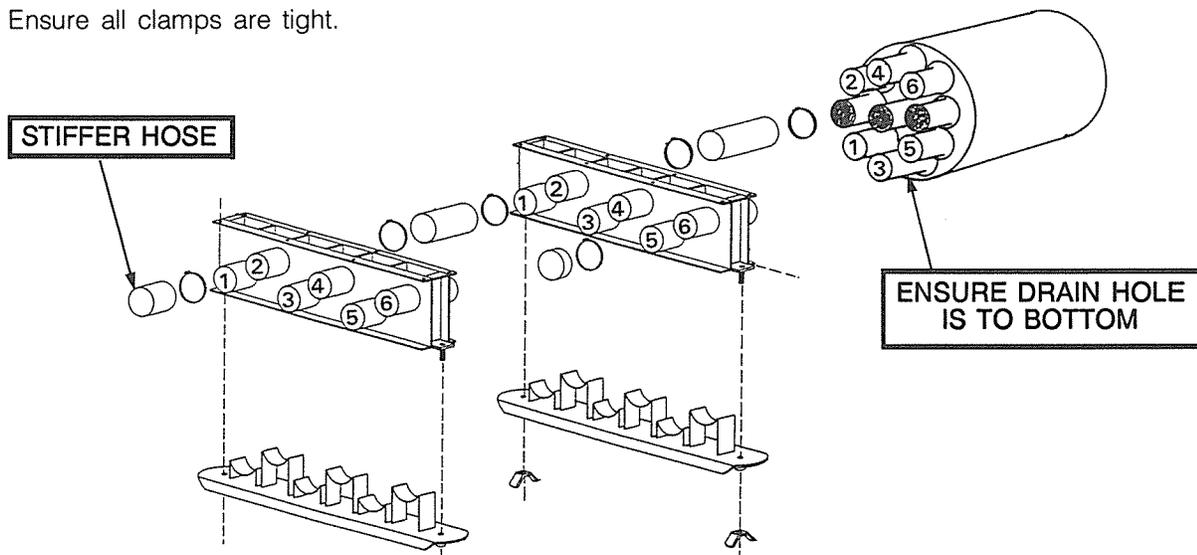
Model 6130 Only

(D) Units using 6 primaries, 51 - 60 runs, the same procedure is used as in (A) except that the hose connections will be as shown below.

Cut 6 lengths of 2 1/2" Diameter Hose 37 1/2" long and install between the collectors. **NOTE:** Use stiffer hose.

All UNUSED ports **MUST** be blanked off using a plastic cap and hose clamp.

Ensure all clamps are tight.



7.6.3 PRIMARY HOSE INSTALLATION - AIRSEEDER ONLY (Continued)

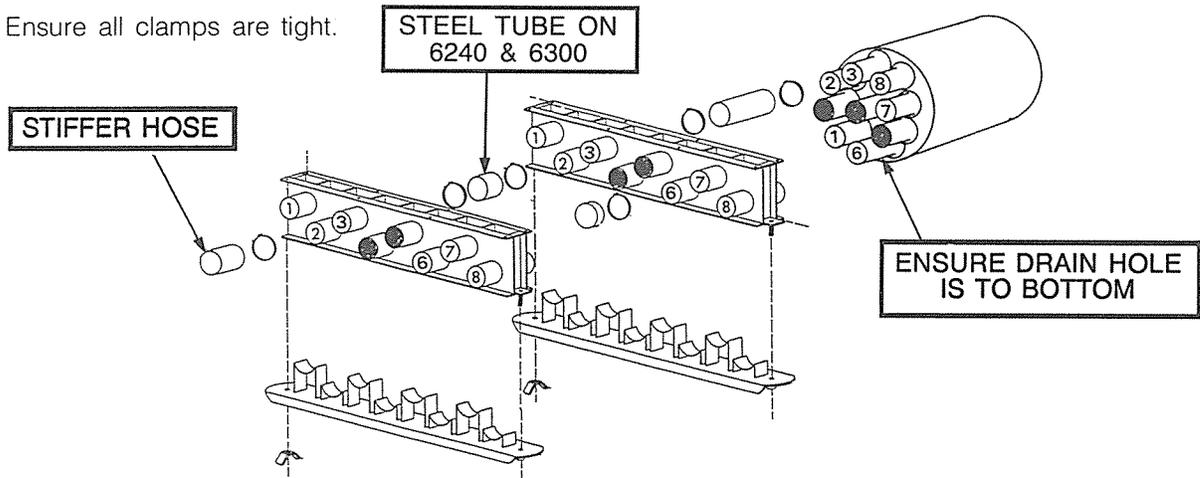
Model 6180, 6240 & 6300 Only

(E) Units using 6 primaries, 51 - 60 runs, the same procedure is used as in (A) except the hose connections will be as shown below.

On 6180, cut 6 lengths of 2 1/2" Diameter Hose 37 1/2" long and install between the collectors. **NOTE:** Use stiffer hose. The 6240 & 6300, use steel tubes with the stiffer hose between the collector bodies.

All UNUSED ports **MUST** be blanked off using a plastic cap and hose clamp.

Ensure all clamps are tight.



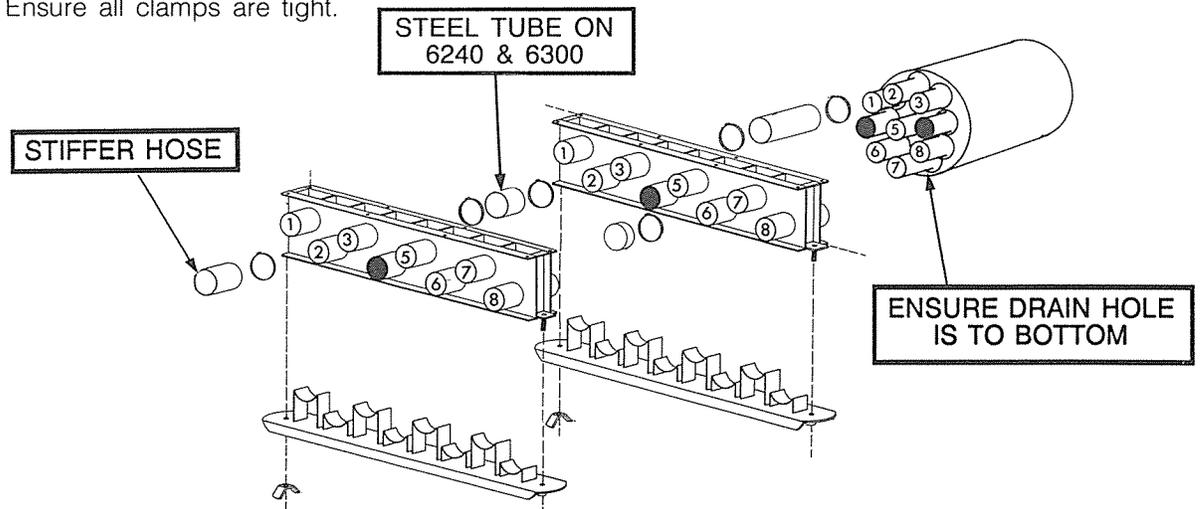
Model 6180, 6240 & 6300 Only

(F) Units using 7 primaries, 61 - 70 runs, the same procedure is used as in (A) except that the hose connections will be as shown below.

On 6180, cut 7 lengths of 2 1/2" Diameter Hose 37 1/2" long and install between the collectors. **NOTE:** Use stiffer hose. The 6240 & 6300, use steel tubes with the stiffer hose between the collector bodies.

All UNUSED ports **MUST** be blanked off using a plastic cap and hose clamp.

Ensure all clamps are tight.



Setup

7.6.3 PRIMARY HOSE INSTALLATION - AIRSEEDER ONLY (Continued)

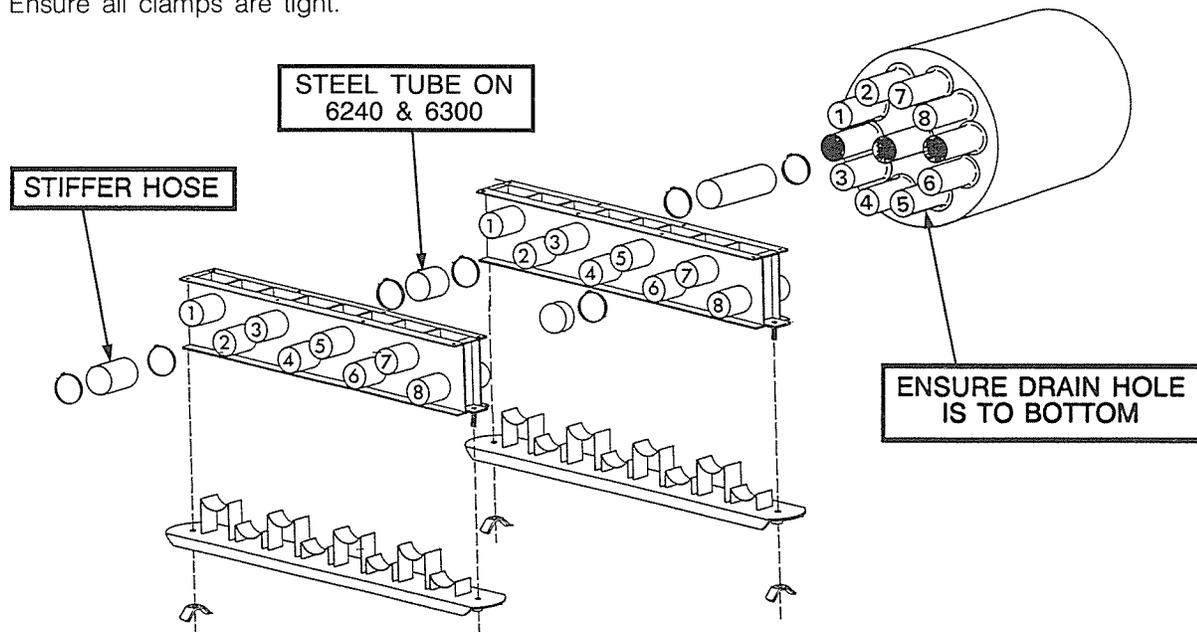
Model 6180, 6240 & 6300 Only

(G) Units using 8 primaries, 71 - 80 runs, the same procedure is used as in (A) except the hose connections will be as shown below.

On 6180, cut 8 lengths of 2 1/2" Diameter Hose 37 1/2" long and install between the collectors. **NOTE:** Use stiffer hose. The 6240 & 6300, use steel tubes with the stiffer hose between the collector bodies.

All UNUSED ports **MUST** be blanked off using a plastic cap and hose clamp.

Ensure all clamps are tight.



7.6.4 AIR SYSTEM INSTALLATION TO THE CULTIVATOR

Mount the Primary run quick couplers to the rear bar no more than 30" from the centre line of the cultivator. Mount Secondary Divider Heads to the cultivator frame. Layouts for specific machines are shown in **SECTION 7.6.6**.

If the machine being set up is not one of the models shown in Section 7.6.6 then use an illustration that closely resembles the unit and follow the general guidelines for hose routing.

There are some basic rules that should be followed. These are listed below.

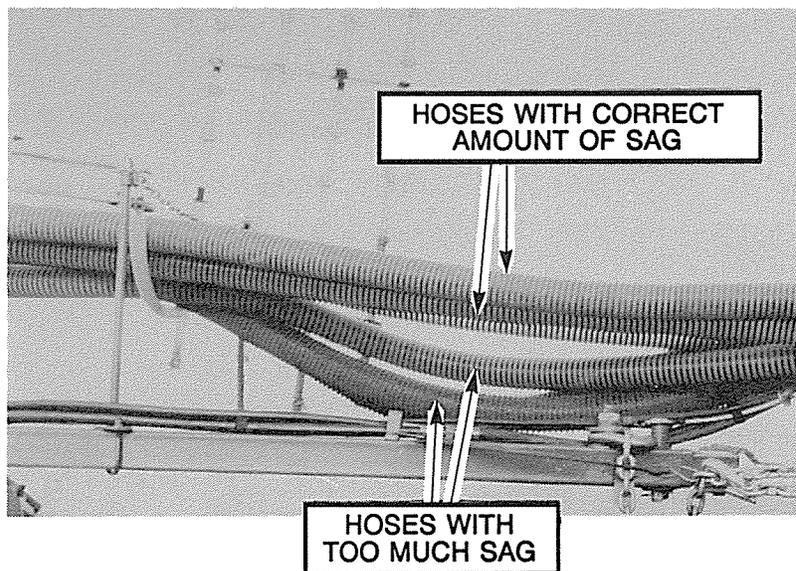
- Always cut the 2 1/2" Diameter Primary hose for the **long** runs first.
- Ensure that the 2 1/2" Diameter Primary hose from the divider runs as level as possible.
- Ensure that the secondary hoses 1" Diameter do not run higher than 3" above the height of the divider.
- Always ensure that the secondary hoses are sufficiently long to accommodate tripping of trips.
- Avoid sharp bends in any of the hoses.

7.6.4 AIR SYSTEM INSTALLATION TO THE CULTIVATOR (Continued)

- Check for pinch points and clearances when folding in and out of transport.
- Allow an extra 3" of hose before cutting secondary hose for fitting in the seed boot.
- If long runs of primary hose are required, it may be necessary to add additional supports to prevent excessive sagging. (Use the same support that is used to support the flat fan divider.)
- Quick coupler blank off plates are provided to blank off the entrance to the hoses when the airseeder is disconnected from the cultivator. These blank off plates should be stored in a place that is readily accessible.

IMPORTANT:

Check that when unit is folded into transport that hoses do not interfere with the Wing-lift mechanism and there are no **KINKS** in any of the hoses.



1. Mount the Primary Hose Support approximately halfway down the airseeder Hitchpoles and to the front frame of the airseeder.
2. Measure and cut the 2 1/2" diameter primary hose to the required lengths between the Quick Coupler and the divider heads. The OUTER HEADS should have the hose installed first, then the inner heads and finally measure and cut the primary hose to the required length between the Airseeder and the Quick Coupler.
3. **IMPORTANT:** MAKE SURE DIVIDER HEAD OUTLETS MATCH WITH METERING WHEEL SIZE I.E. 7 OUTLET HEAD TO 7 RUN METERING WHEEL, ETC.

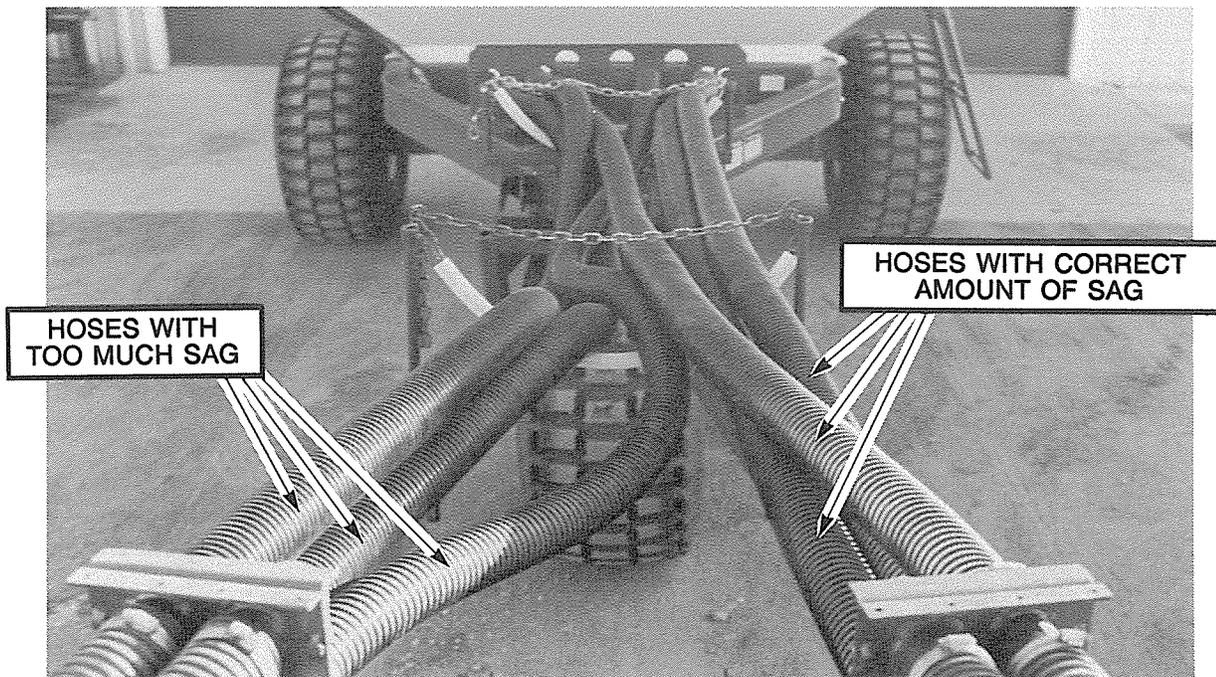
Setup

7.6.4 AIR SYSTEM INSTALLATION TO THE CULTIVATOR (Continued)

4. Run hoses with a minimum amount of sag. Hoses should be straight as possible, but not too tight. If there is more than one divider head on one side of the cultivator, twist primary hoses together and tie with hose ties.



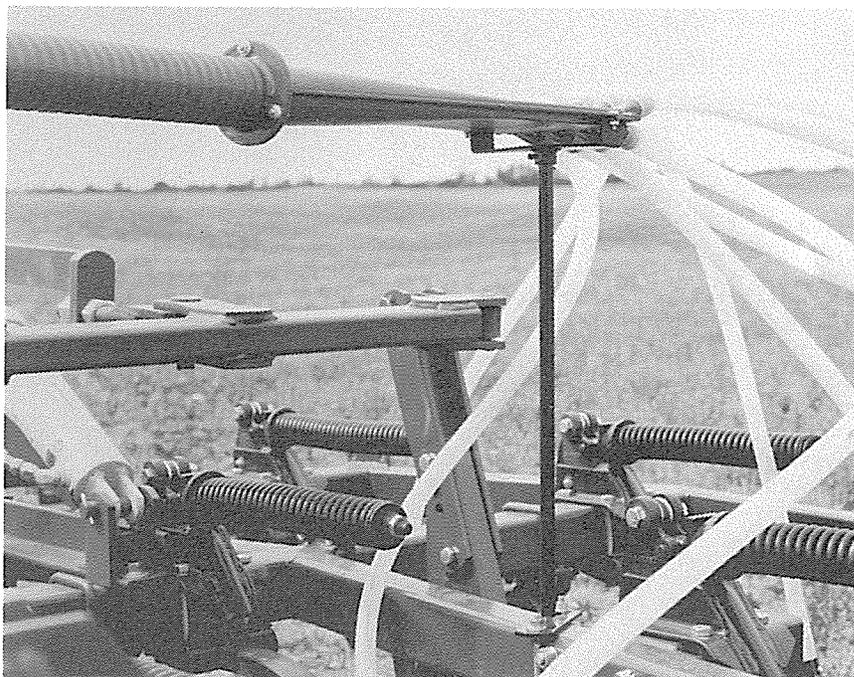
Side View Routing of Hoses



Back View Routing of Hoses

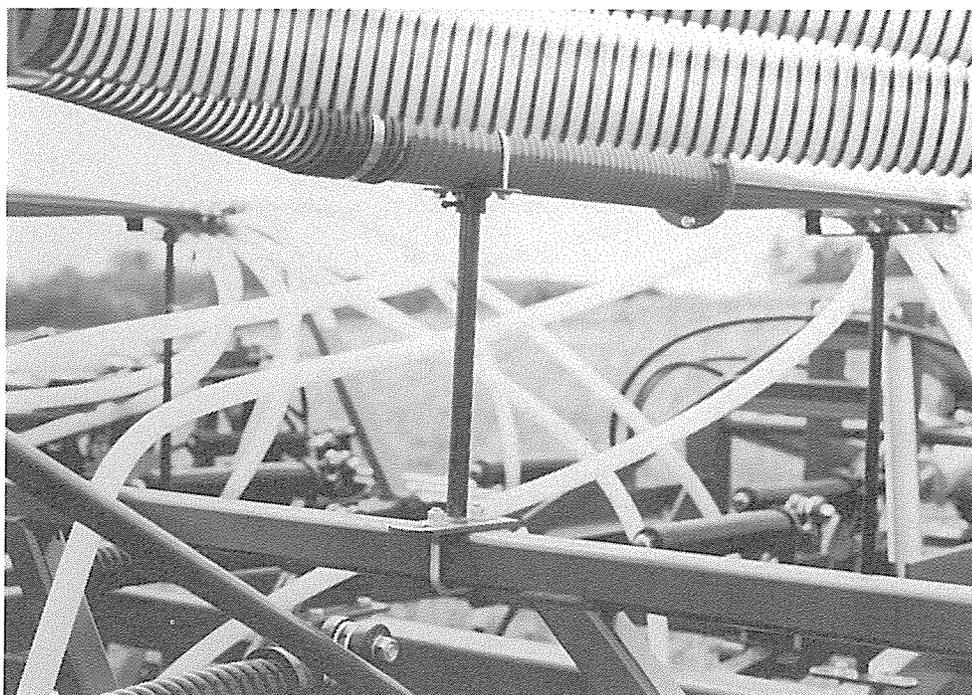
Run the hoses between the Airseeder and cultivator with sufficient sag to allow for sharp turns without the hoses stretching and pulling off the steel primary tubes.

7.6.5 SECONDARY HOSE INSTALLATION



Flat Fan Divider

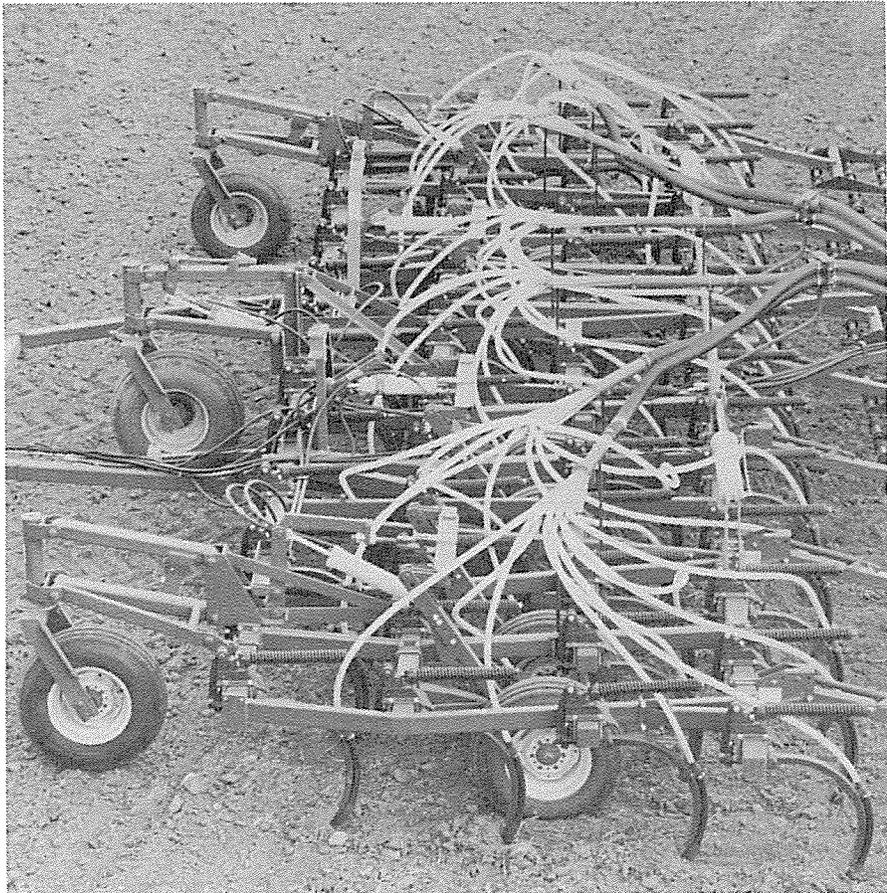
Secondary Dividers MUST be level, shorten supports if necessary.



Shortened Support Bracket for Divider Head

Setup

7.6.5 SECONDARY HOSE INSTALLATION (Continued)



Completed Installation of Hoses on 8900 Floating Hitch Cultivator.



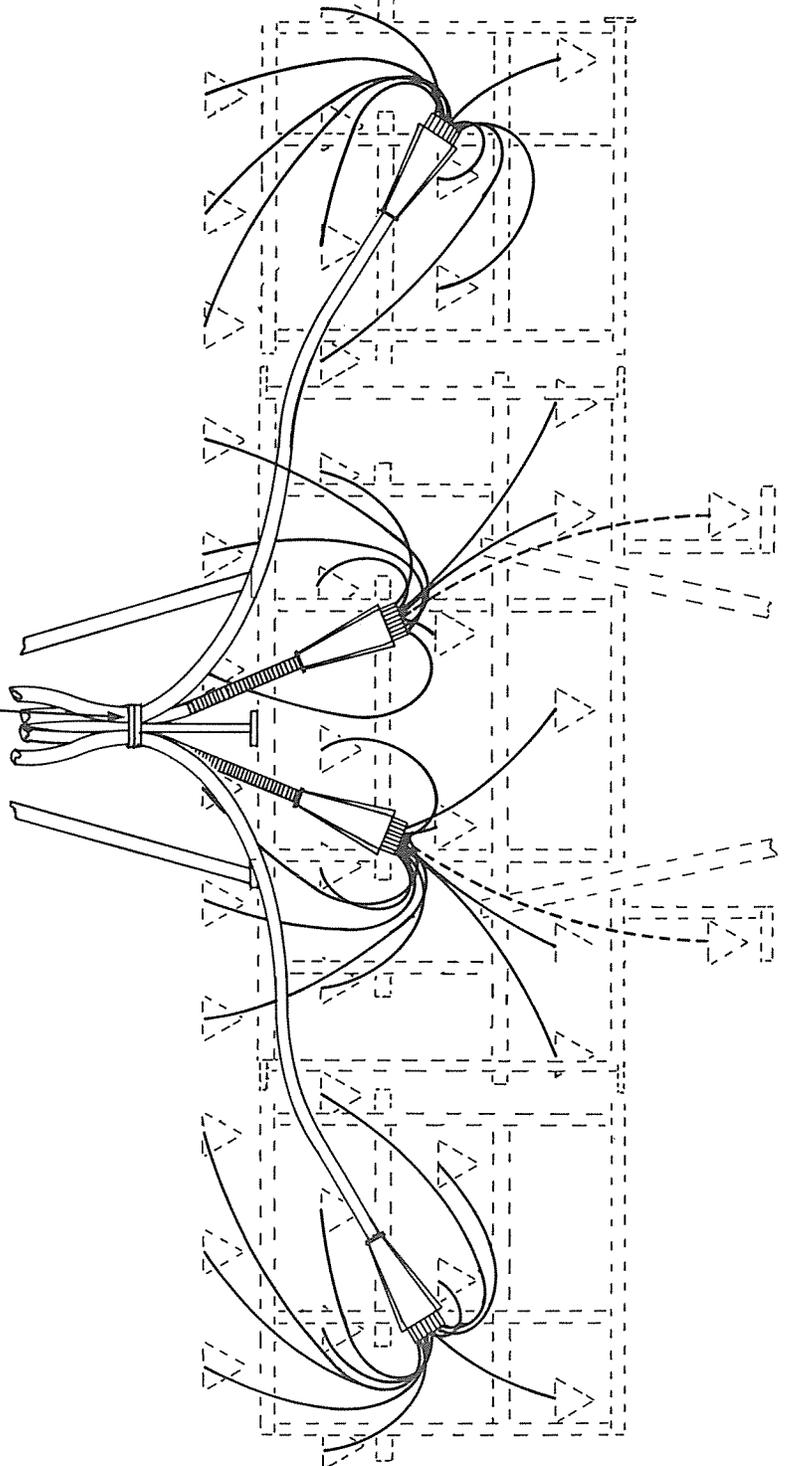
7.6.6 CULTIVATOR AIR HOSE ROUTING

8" SPACING.

L-225 Challenger

NOTE: Cut off 6" of black hose from the **MORRIS** seed boot assembly before routing the secondary hose

PRIMARY HOSE COUPLER



DISTRIBUTION HEAD SIZES			
Size	Left Wing	Centre	Right Wing
25'	10	9, 9	10
29'	9	9, 8, 9	9

Setup

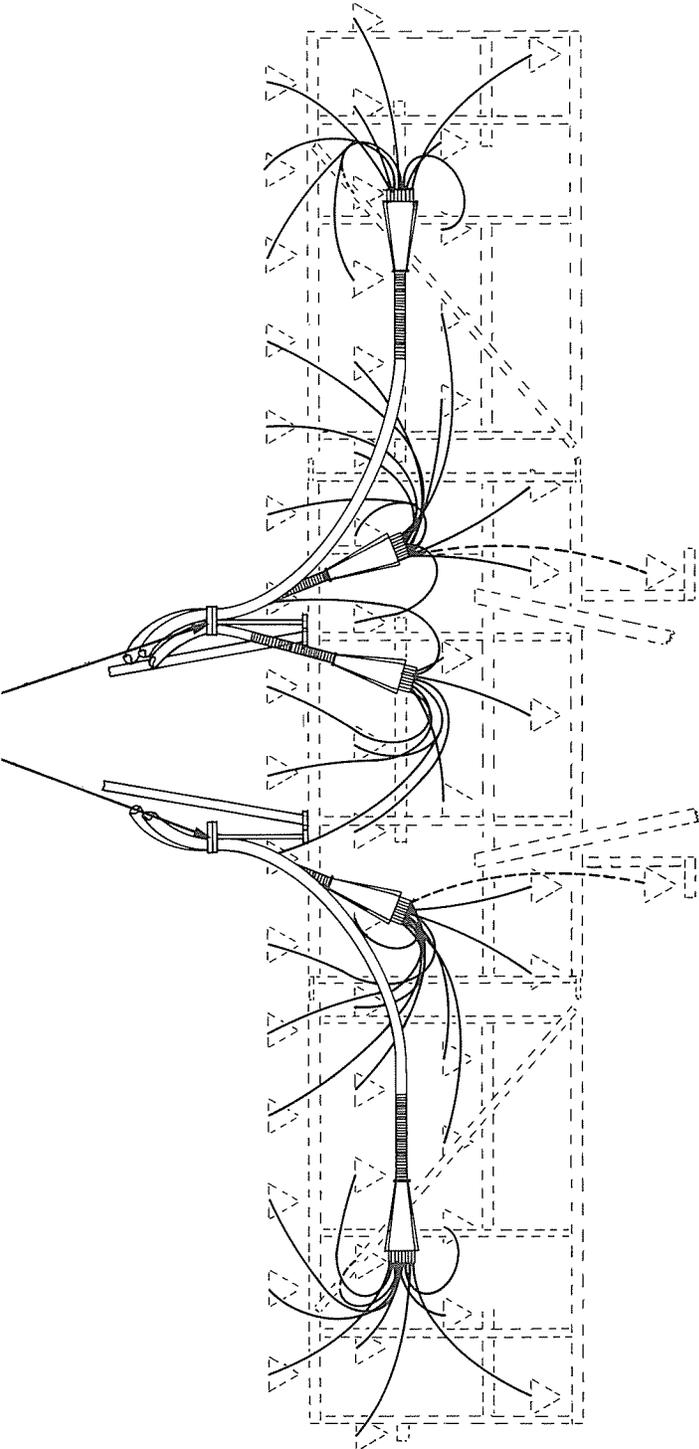
7.6.6 CULTIVATOR AIR HOSE ROUTING (Continued)

8" SPACING.

L-233 Challenger

NOTE: Cut off 6" of black hose from the **MORRIS** seed boot assembly before routing the secondary hose

PRIMARY HOSE COUPLER



DISTRIBUTION HEAD SIZES

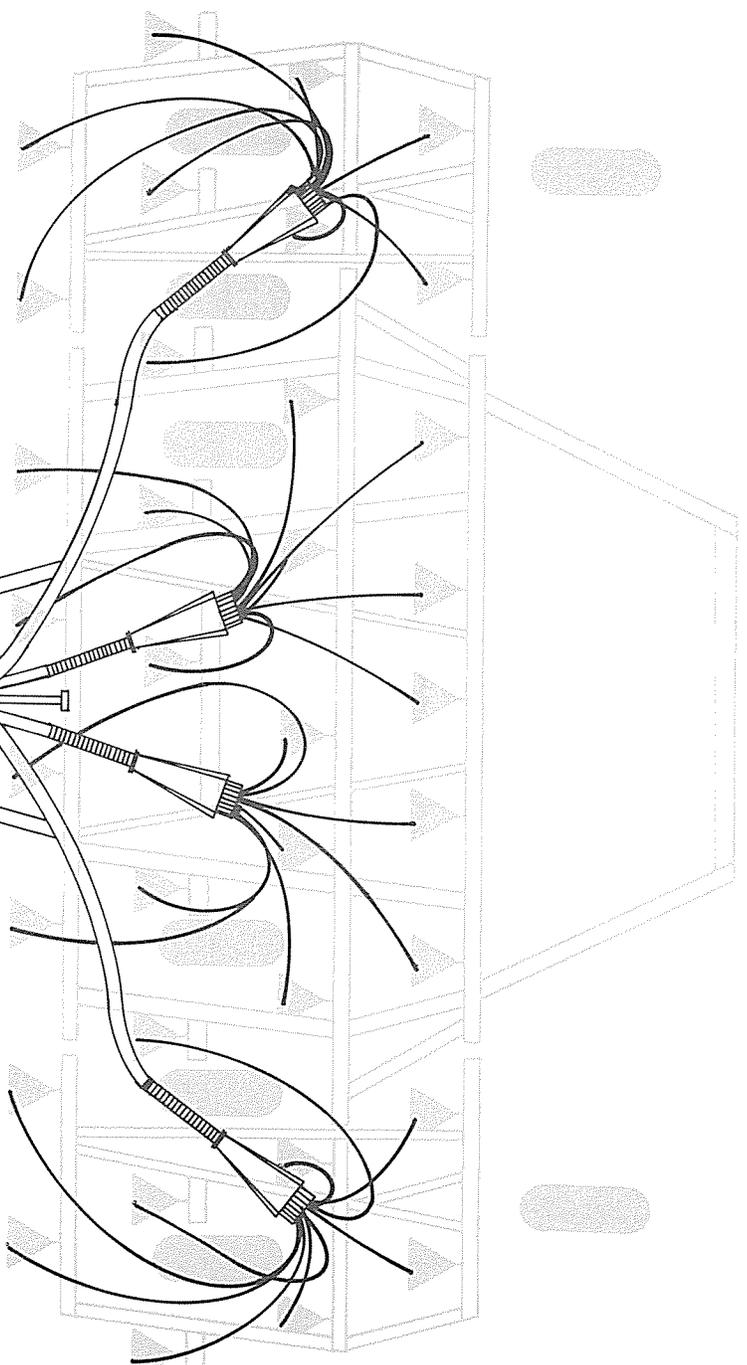
Size	Left Wing	Centre	Right Wing
33'	10	10, 10, 10	10
37'	10, 9	9, 9	9, 10
42'	9, 9	9, 8, 9	9, 9

7.6.6 CULTIVATOR AIR HOSE ROUTING (Continued)

9" SPACING.

MP-912 25' - 29'
 8900 25' - 29'
 9000 25' - 29'

NOTE: On 9000 Models, cut off 6" of black hose from the banding boot before routing the secondary hose.



27' Shown
 PRIMARY HOSE COUPLER

DISTRIBUTION HEAD SIZES			
Size	Left Wing	Centre	Right Wing
25'	8	9, 8	8
27'	9	9, 8	9
29'	9	9, 9	10

Setup

7.6.6 CULTIVATOR AIR HOSE ROUTING (Continued)

9" SPACING.

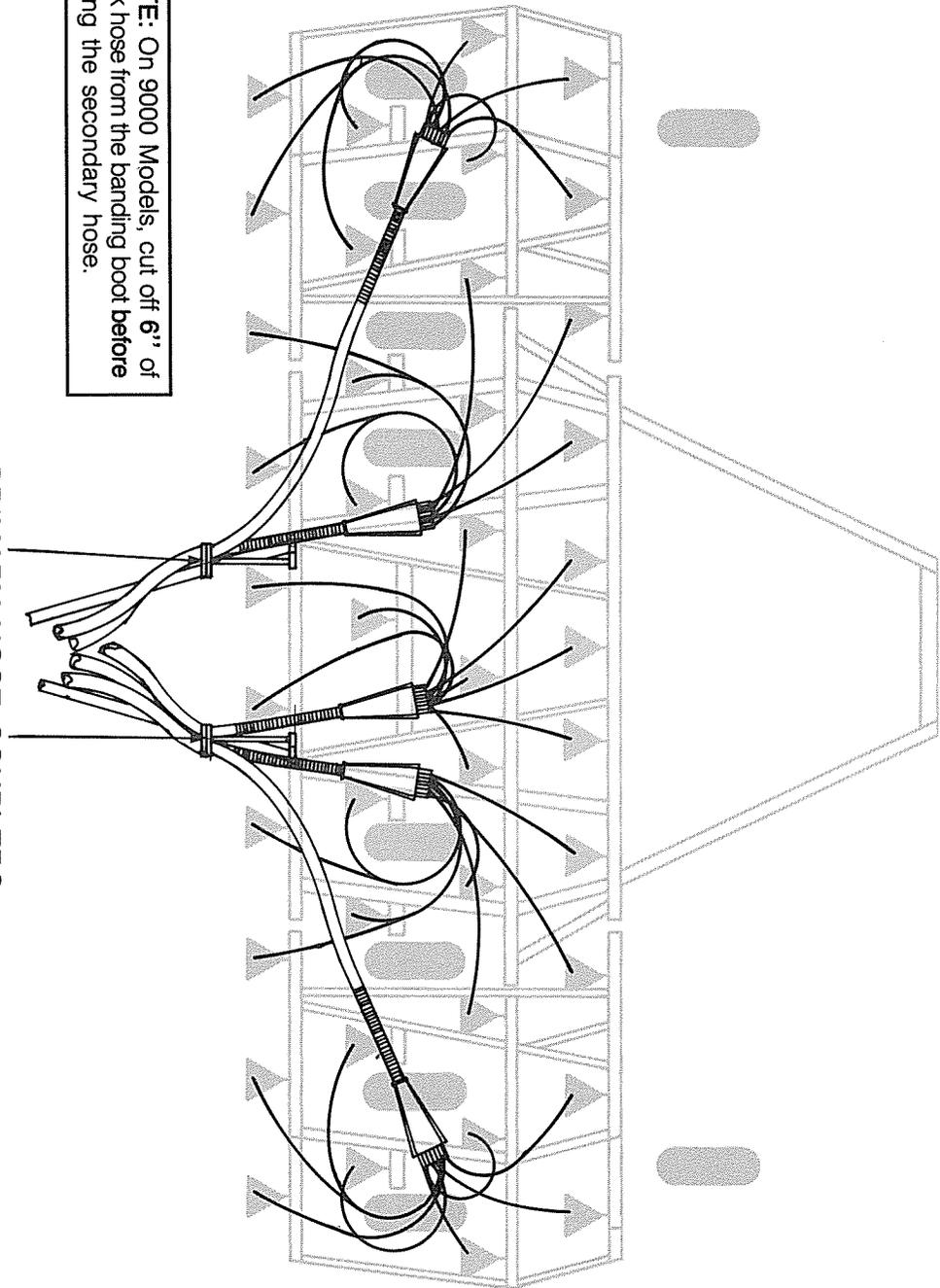
MP-912 31' - 37'

8900 31' - 37'

9000 31' - 37'

NOTE: On 9000 Models, cut off 6" of black hose from the banding boot before routing the secondary hose.

**PRIMARY HOSE COUPLERS
MOUNTED 14" FROM CULTIVATOR CENTRE LINE
31' SHOWN**



DISTRIBUTION HEAD SIZES

Size	Left Wing	Centre	Right Wing
31'	8	8 9 8	8
33'	9	8 9 8	9
35'	9	9 9 9	9
37'	10	10 9 10	10

7.6.6 CULTIVATOR AIR HOSE ROUTING (Continued)

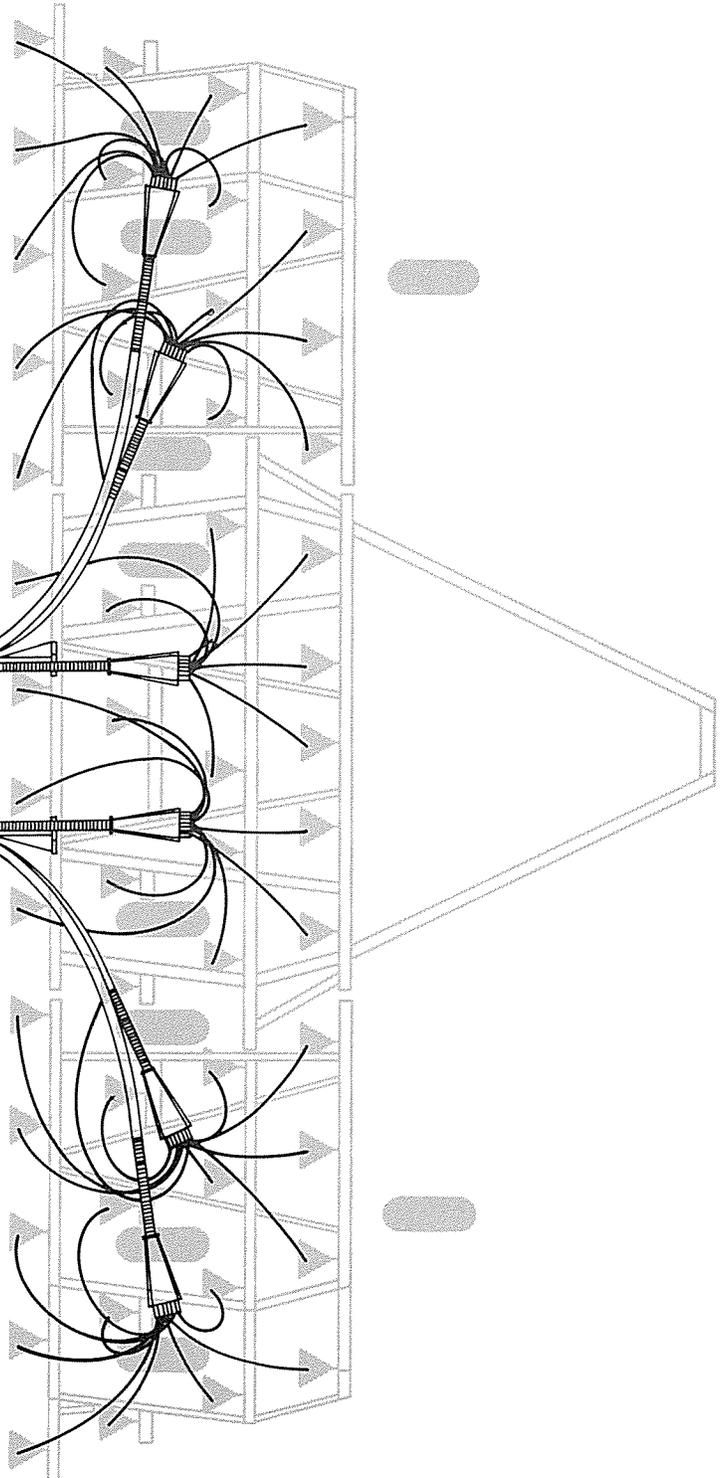
9" SPACING.

MP-912 39' - 41'

8900 39' - 41'

9000 39' - 41'

NOTE: On 9000 Models, cut off 6" of black hose from the banding boot before routing the secondary hose.



PRIMARY HOSE COUPLERS

MOUNTED 14" FROM CULTIVATOR CENTRE LINE

DISTRIBUTION HEAD SIZES

Size	Left Wing	Centre	Right Wing
39'	8 9	8 9	9 8
41'	9 9	8 9	9 9

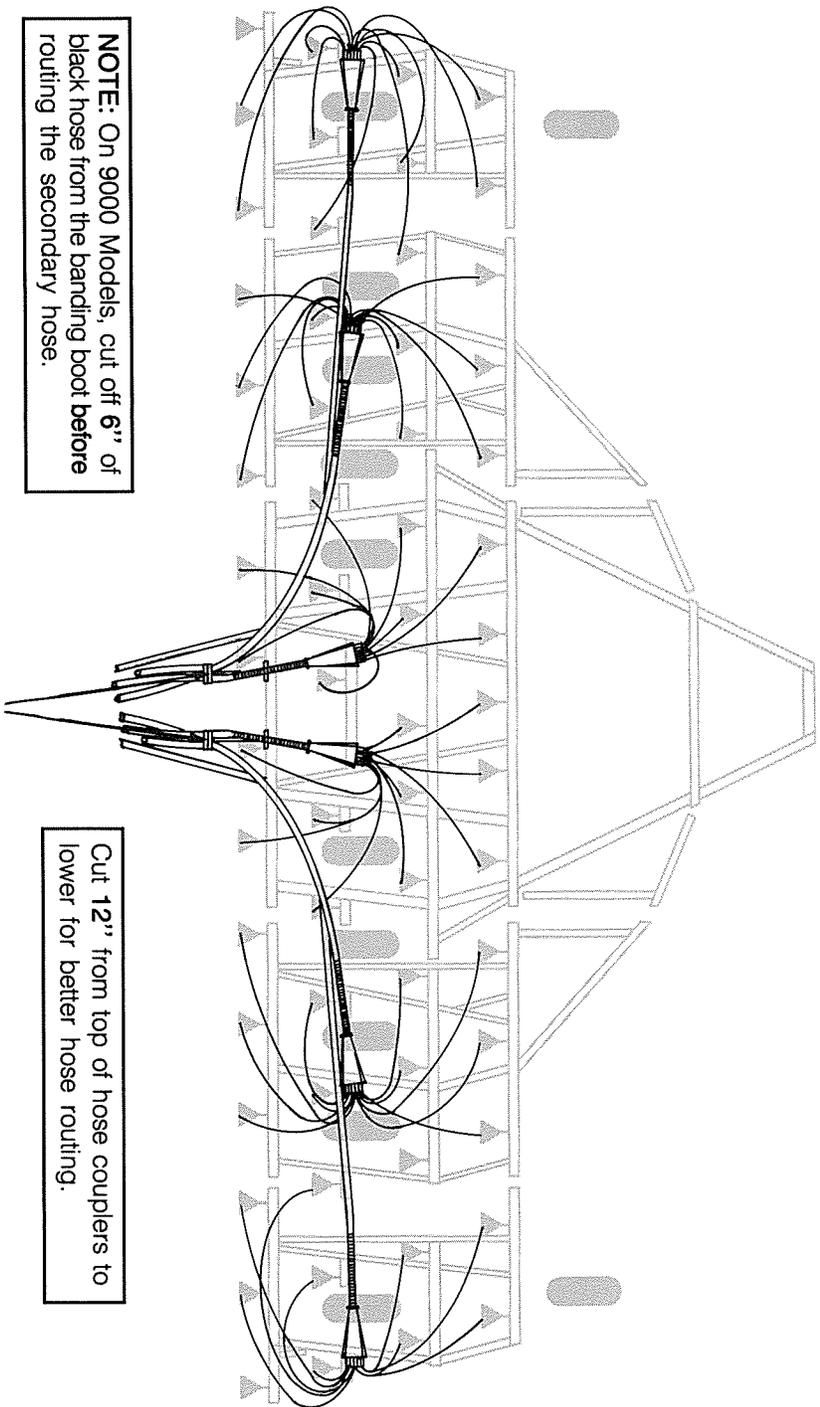
Setup

7.6.6 CULTIVATOR AIR HOSE ROUTING (Continued)

9" SPACING.	
MP-912	43' - 45'
8900	43' - 45'
9000	43' - 45'

- 1) Support towers for the divider heads on the inner and outer wings **must** be shortened to 12" long. This prevents interference when folding up.
- 2) Unit should be winged up **before** all hose routings are complete to check for interference especially at the hinge points.
- 3) Extra secondary (1") hose may be required to complete all hose routings.
- 4) Primary hoses (2 1/2") must be tight as possible with little or no sag.

NOTE: On 9000 Models, cut off 6" of black hose from the banding boot before routing the secondary hose.



Cut 12" from top of hose couplers to lower for better hose routing.

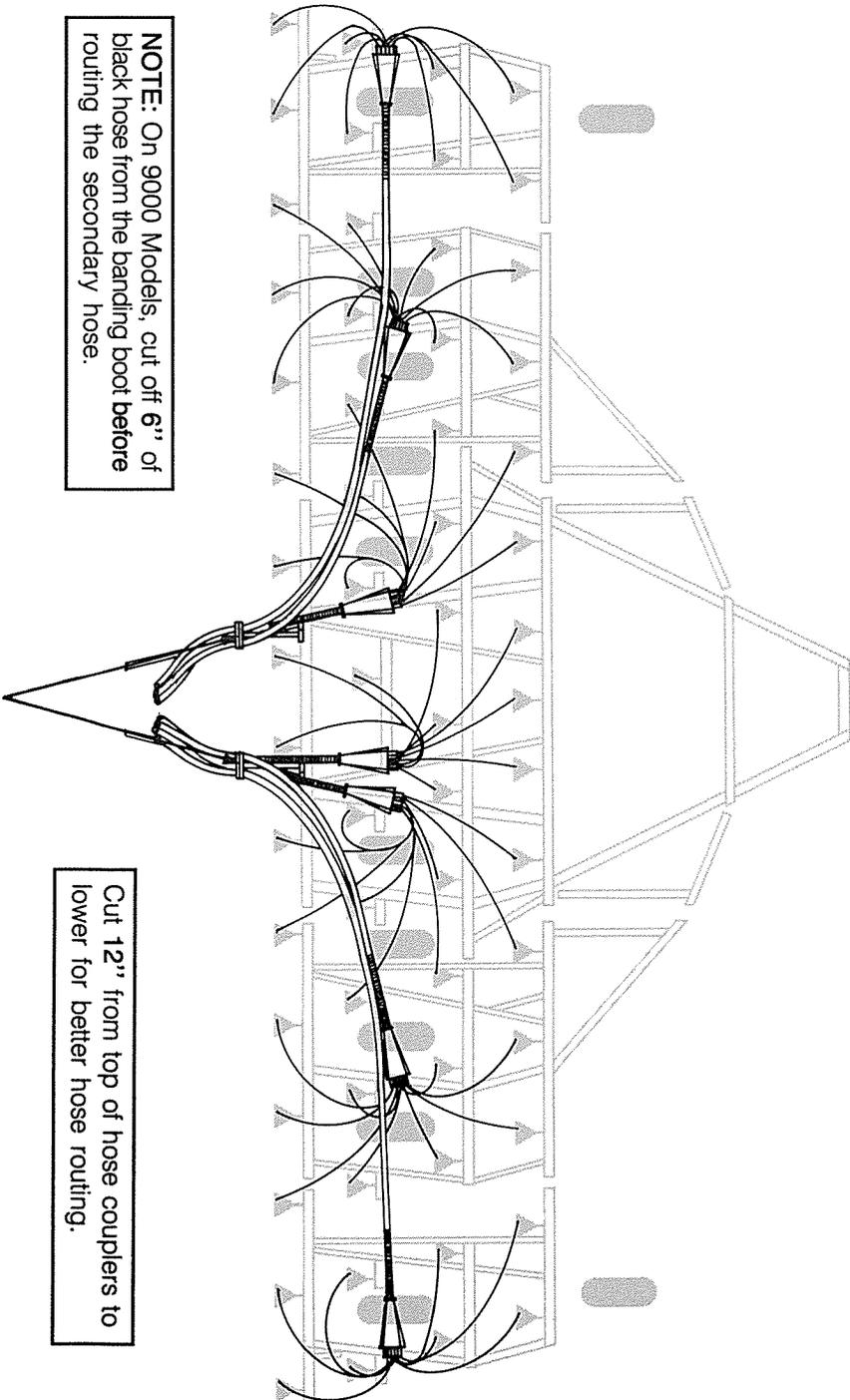
**PRIMARY HOSE COUPLERS
MOUNTED 14" FROM CULTIVATOR CENTRE LINE**

DISTRIBUTION HEAD SIZES					
Size	Outer Wing	Inner Wing	Centre	Inner Wing	Outer Wing
43'	9	10	10, 9	10	9
45'	10	10	10, 9	10	10

7.6.6 CULTIVATOR AIR HOSE ROUTING (Continued)

9" SPACING.
 MP-912 47'
 8900 47'
 9000 47'

- 1) Support towers for the divider heads on the inner and outer wings must be shortened to 12" long. This prevents interference when folding up.
- 2) Unit should be winged up **before** all hose routings are complete to check for interference especially at the hinge points.
- 3) Extra secondary (1") hose may be required to complete all hose routings.
- 4) Primary hoses (2 1/2") must be tight as possible with little or no sag.



NOTE: On 9000 Models, cut off 6" of black hose from the banding boot before routing the secondary hose.

Cut 12" from top of hose couplers to lower for better hose routing.

PRIMARY HOSE COUPLERS

MOUNTED 14" FROM CULTIVATOR CENTRE LINE

DISTRIBUTION HEAD SIZES					
Size	Outer Wing	Inner Wing	Centre	Inner Wing	Outer Wing
47'	8	9	9, 9, 9	9	8

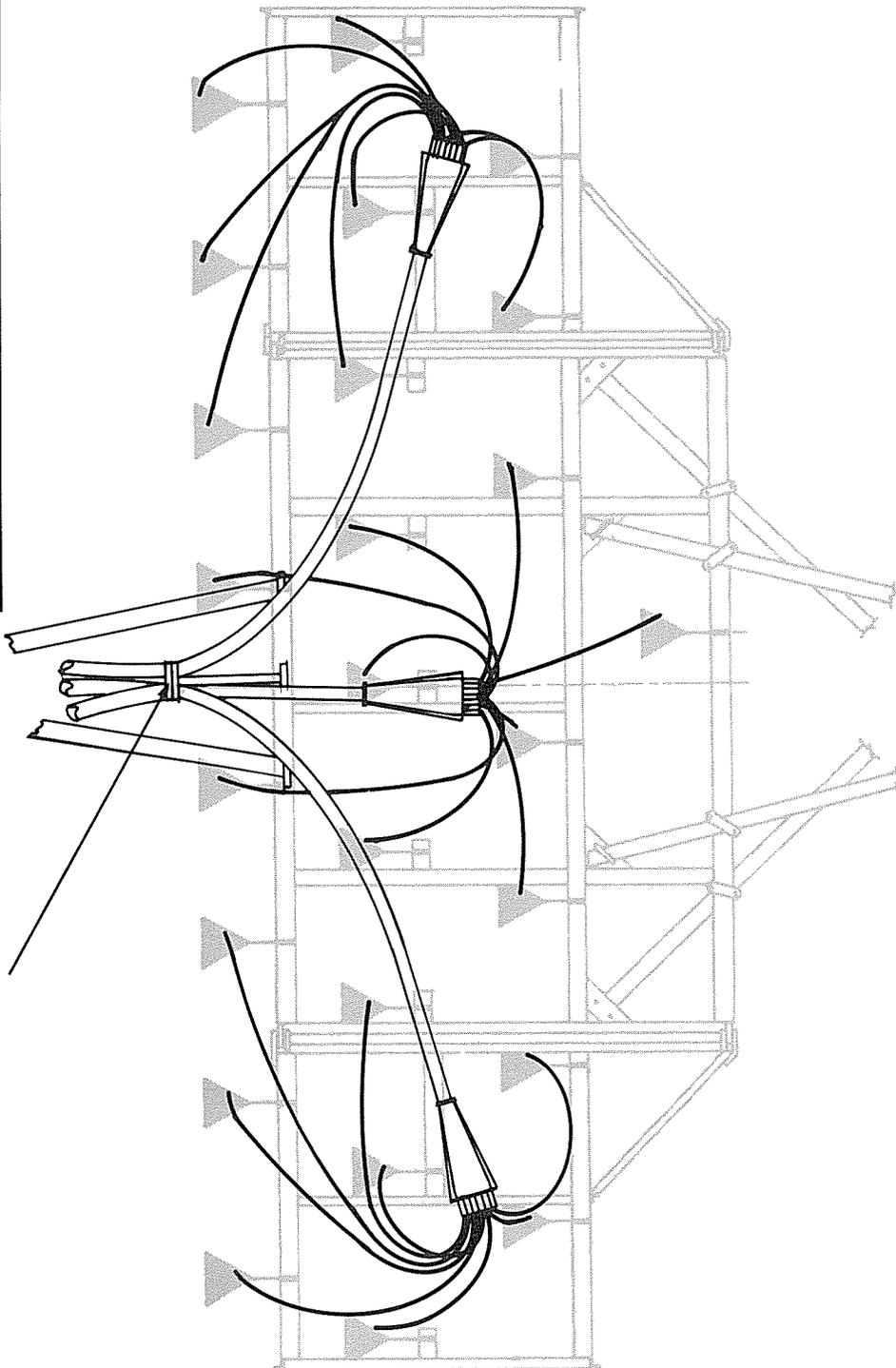
Setup

7.6.6 CULTIVATOR AIR HOSE ROUTING (Continued)

12" SPACING.
CP-725 25' - 29'

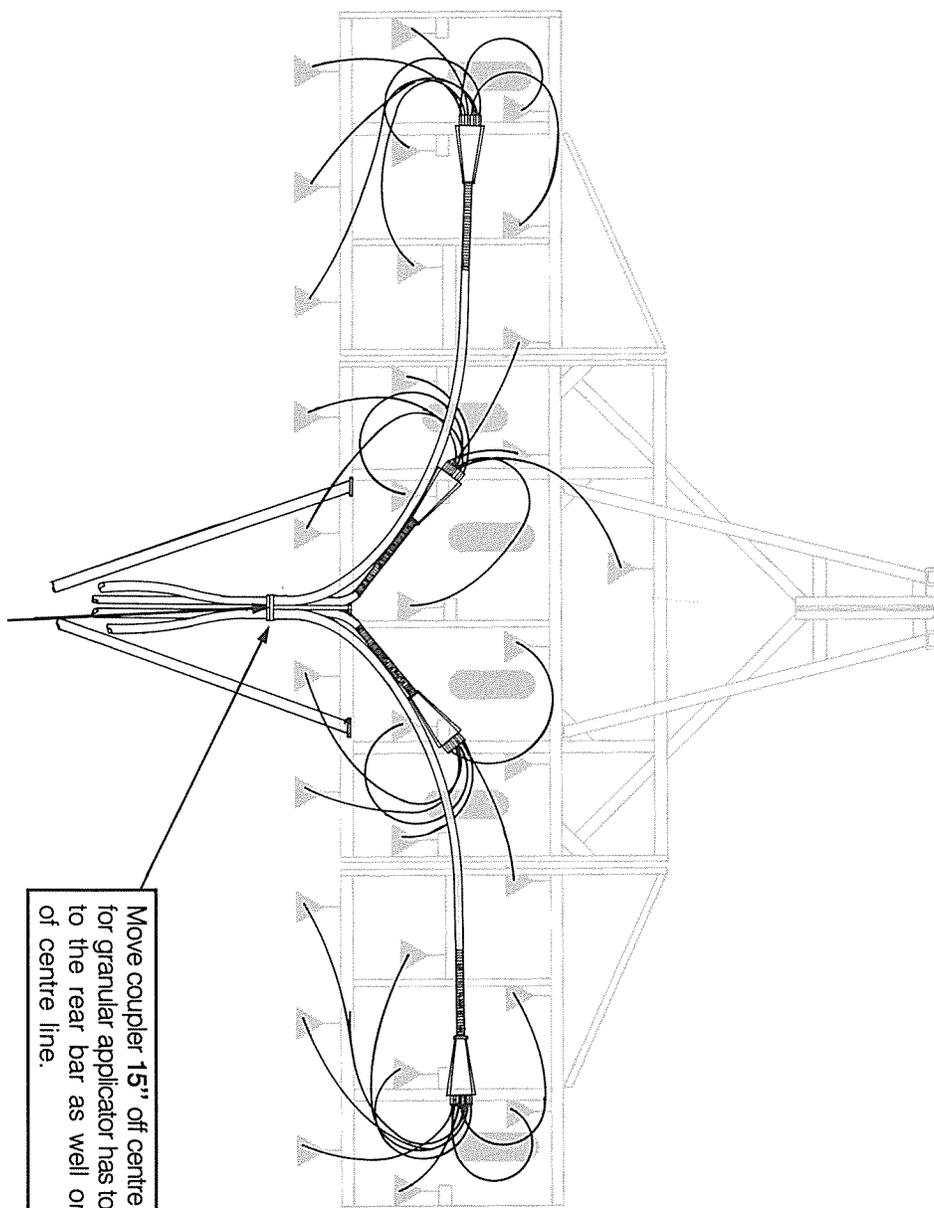
DISTRIBUTION HEAD SIZES			
Size	Left Wing	Centre	Right Wing
25'	8	9	8
27'	9	9	9
29'	10	9	10

25' Shown
PRIMARY HOSE COUPLER



7.6.6 CULTIVATOR AIR HOSE ROUTING (Continued)

12" SPACING.
CP-731 31' - 37'



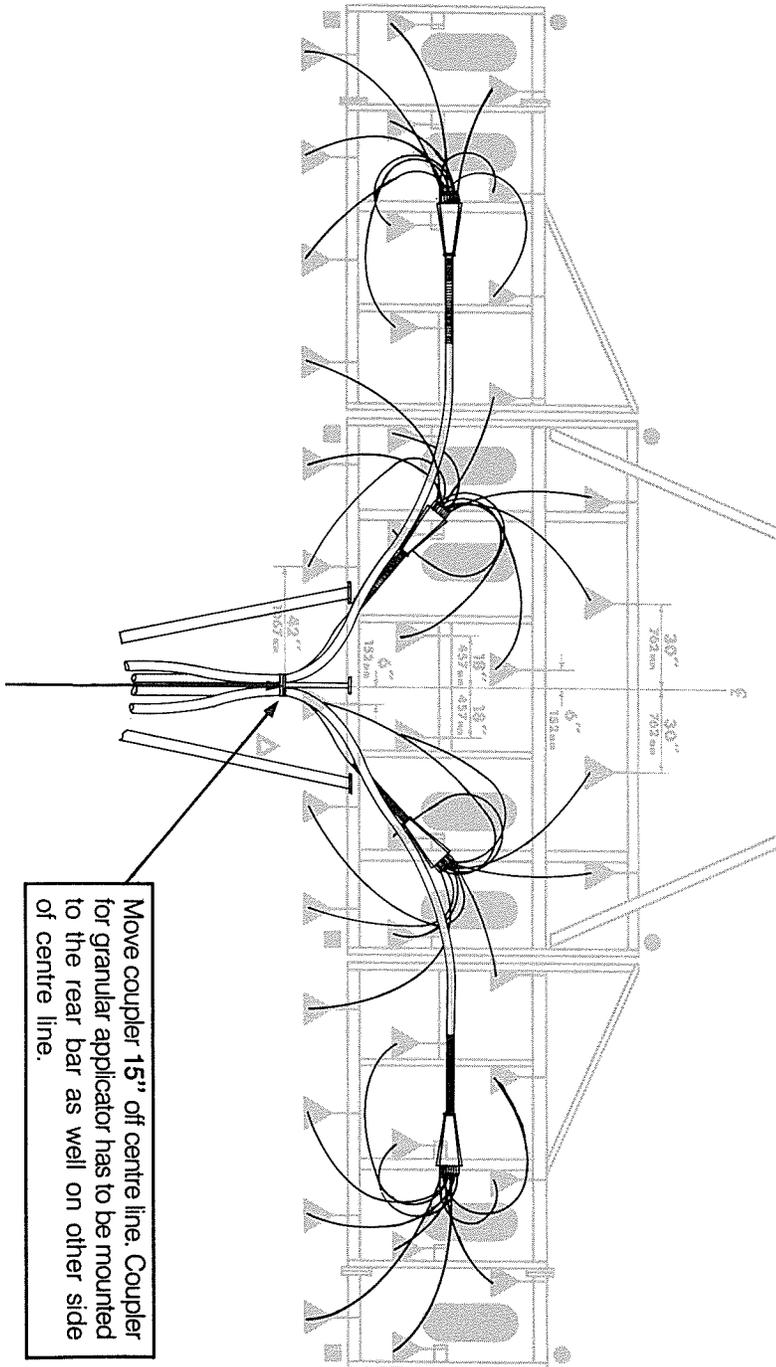
PRIMARY HOSE COUPLER
31' SHOWN

DISTRIBUTION HEAD SIZES			
Size	Left Wing	Centre	Right Wing
31'	8	8, 7	8
33'	9	8, 8	8
35'	9	9, 8	9
37'	10	9, 9	9

Setup

7.6.6 CULTIVATOR AIR HOSE ROUTING (Continued)

12" SPACING.
CP-740 40'



PRIMARY HOSE COUPLERS
MOUNTED 14" FROM CULTIVATOR CENTRE LINE

DISTRIBUTION HEAD SIZES			
Size	Left Wing	Centre	Right Wing
40'	10	10, 10	10

7.6.6 CULTIVATOR AIR HOSE ROUTING (Continued)

12" SPACING.

MP-912 25' - 29'

8900 25' - 29'

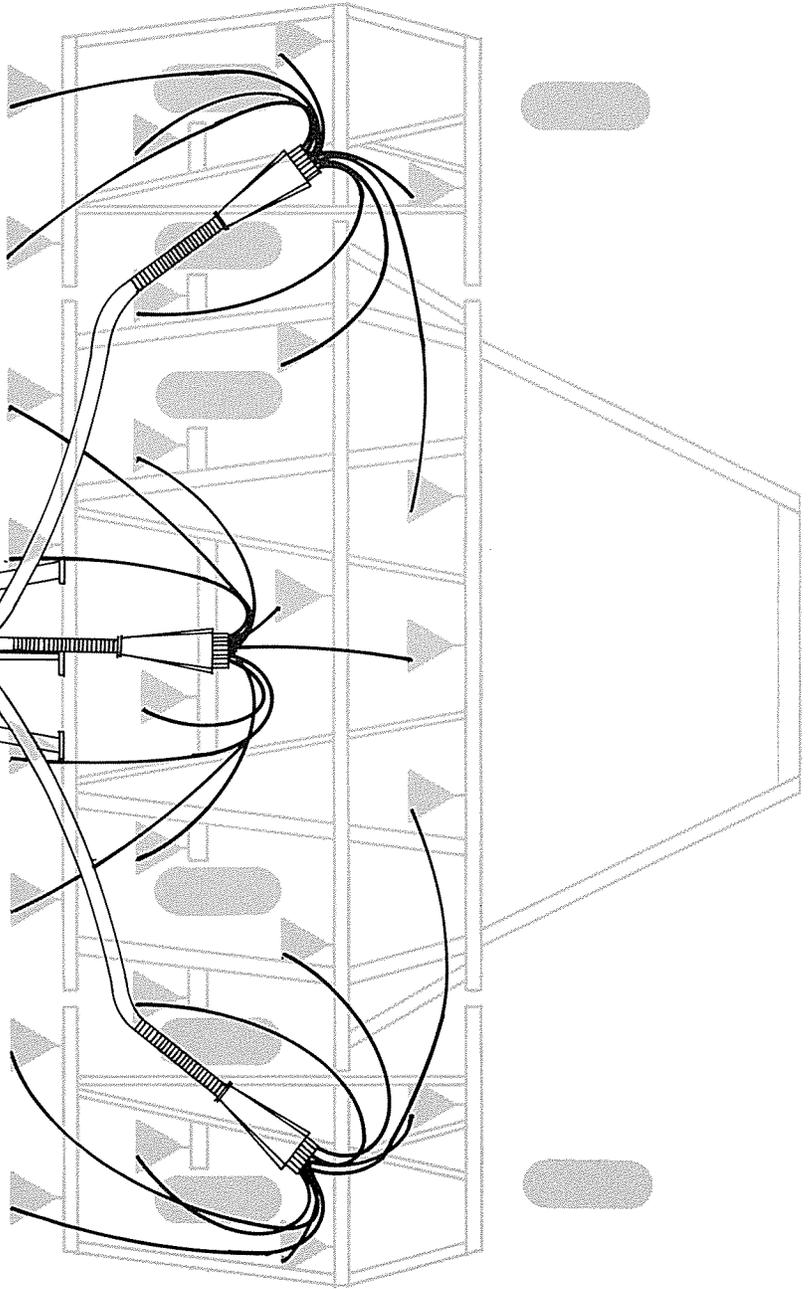
Move coupler 15" off centre line. Coupler for granular applicator has to be mounted to the rear bar as well on other side of centre line.

PRIMARY HOSE COUPLER

25' Shown

DISTRIBUTION HEAD SIZES

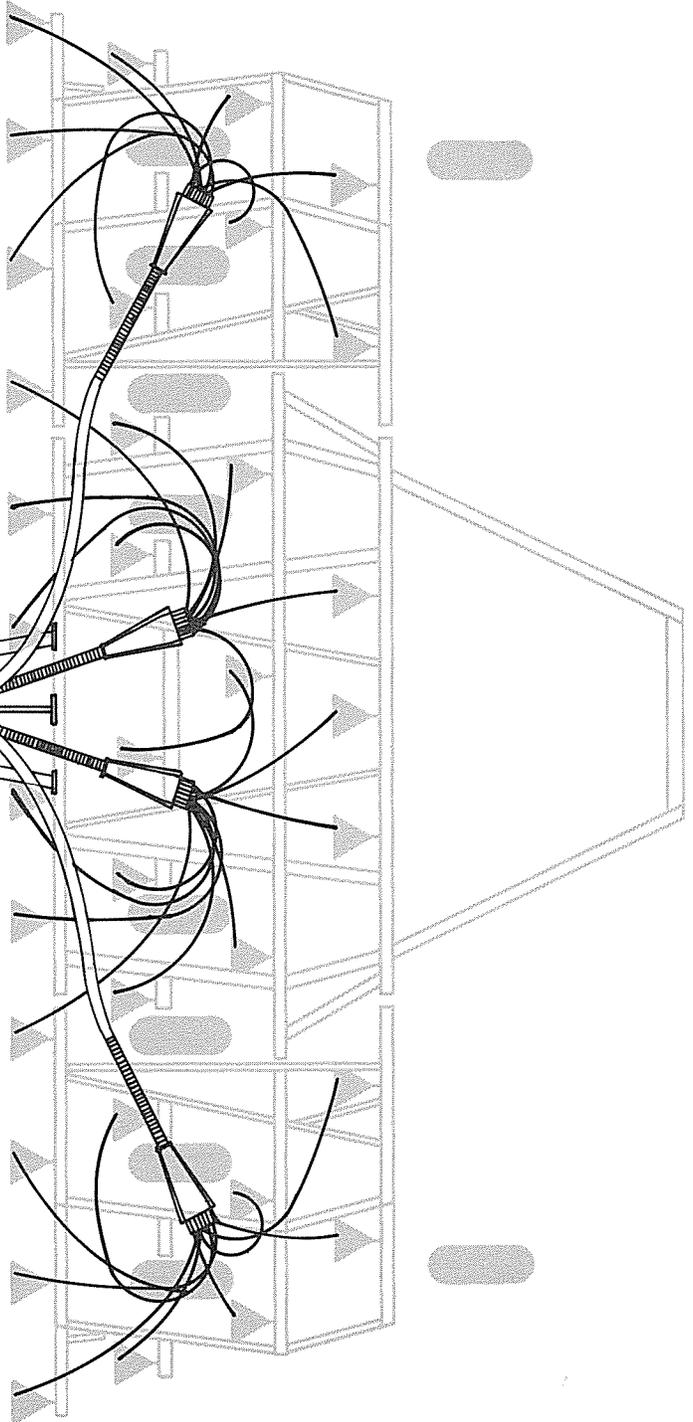
Size	Left Wing	Centre	Right Wing
25'	8	9	8
27'	9	9	9
29'	10	9	10



Setup

7.6.6 CULTIVATOR AIR HOSE ROUTING (Continued)

12" SPACING.
 MP-912 31' - 39'
 8900 31' - 39'



PRIMARY HOSE COUPLER

35' SHOWN

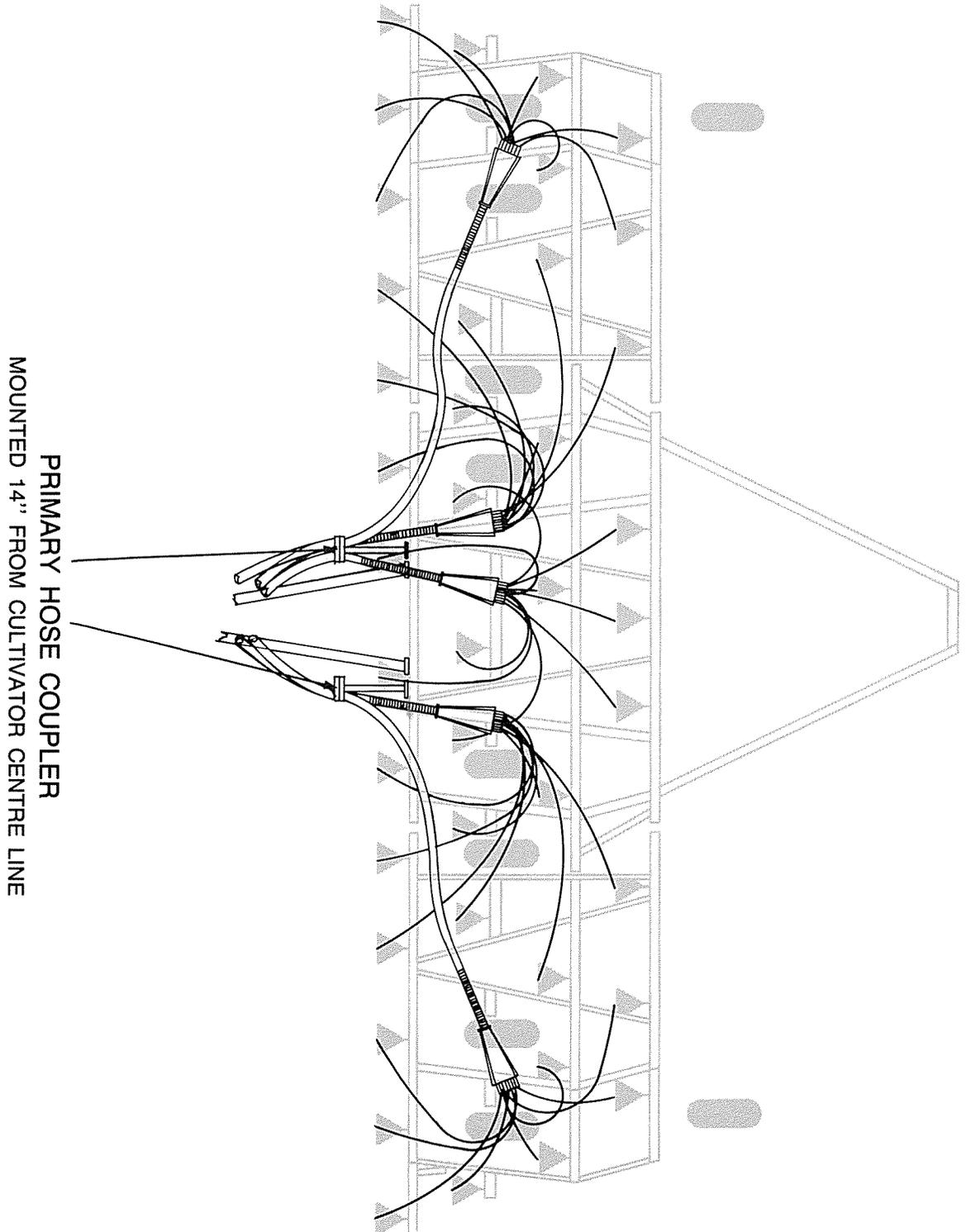
Move coupler 15" off centre line. Coupler for granular applicator has to be mounted to the rear bar as well on other side of centre line.

DISTRIBUTION HEAD SIZES			
Size	Left Wing	Centre	Right Wing
31'	8	8, 7	8
33'	8	8, 9	8
35'	9	8, 9	9
37'	9	9, 10	9
39'	10	9, 10	10

7.6.6 CULTIVATOR AIR HOSE ROUTING (Continued)

12" SPACING.
 MP-912 41'
 8900 41'

PRIMARY HOSE COUPLER MOUNTED 14" FROM CULTIVATOR CENTRE LINE			
DISTRIBUTION HEAD SIZES			
Size	Left Wing	Centre	Right Wing
41'	8	8, 8, 9	8

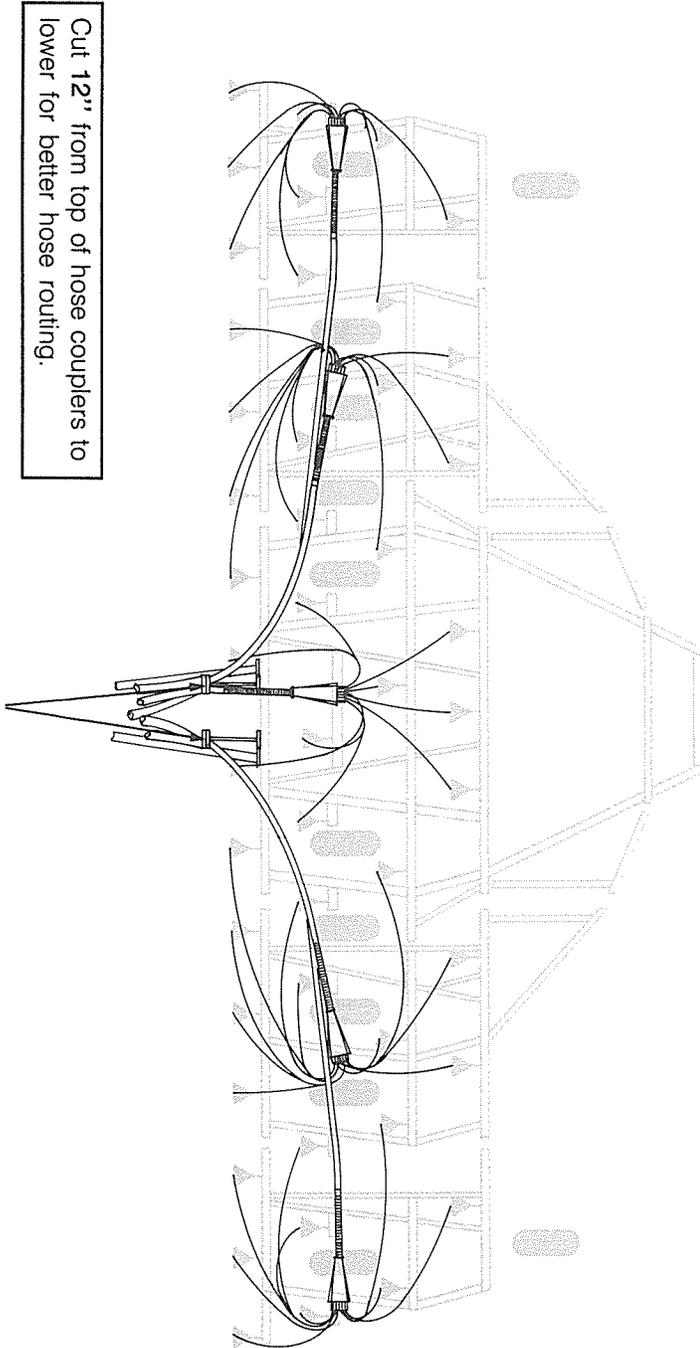


Setup

7.6.6 CULTIVATOR AIR HOSE ROUTING (Continued)

12" SPACING.
 MP-912 43' - 49'
 8900 43' - 49'

- 1) Support towers for the divider heads on the inner and outer wings **must** be shortened to 12" long. This prevents interference when folding up.
- 2) Unit should be winged up **before** all hose routings are complete to check for interference especially at the hinge points.
- 3) Extra secondary (1") hose may be required to complete all hose routings.
- 4) Primary hoses (2 1/2") must be tight as possible with little or no sag across the cultivator.



Cut 12" from top of hose couplers to lower for better hose routing.

PRIMARY HOSE COUPLER
 MOUNTED 14" FROM CULTIVATOR CENTRE LINE
 47' SHOWN

DISTRIBUTION HEAD SIZES					
Size	Outer Wing	Inner Wing	Centre	Inner Wing	Outer Wing
43'	8	9	9	9	8
45'	9	9	9	9	9
47'	9	10	9	10	9
49'	10	10	9	10	10

7.6.6 CULTIVATOR AIR HOSE ROUTING (Continued)

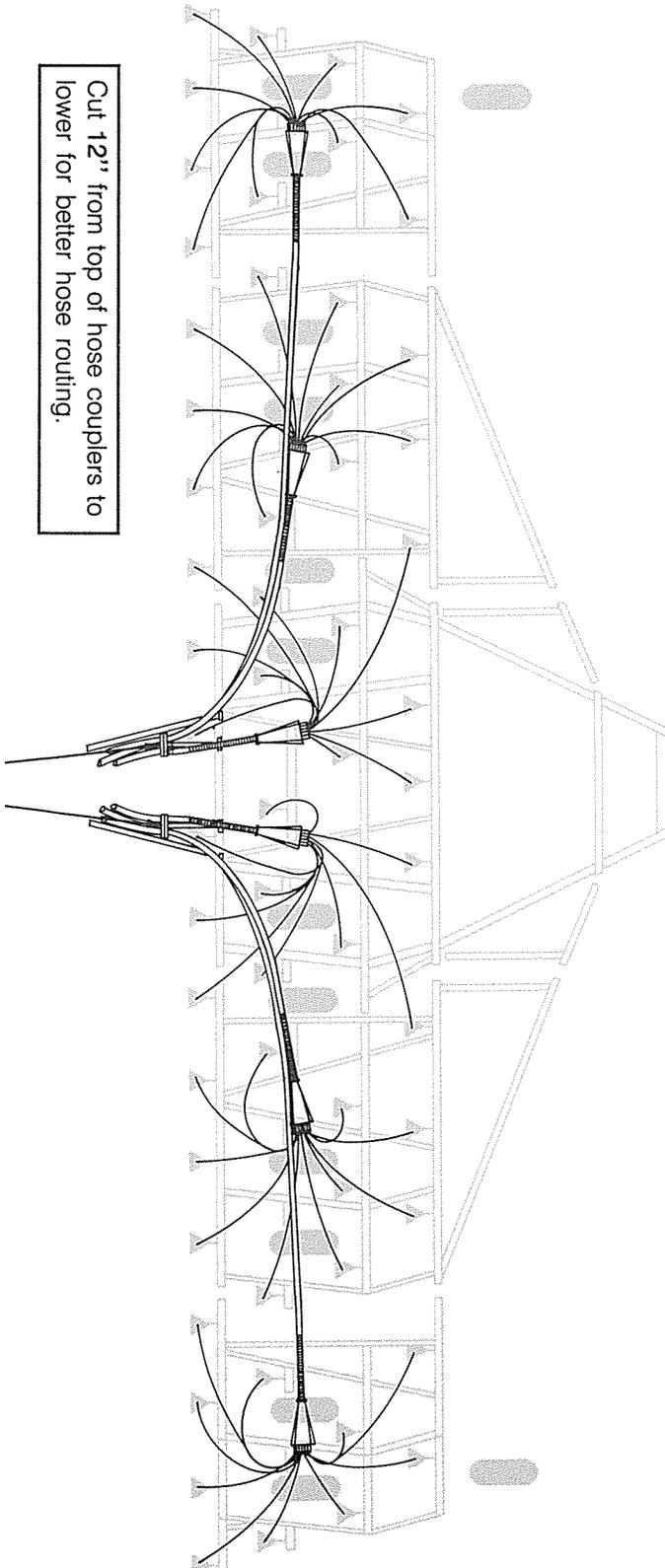
12" SPACING.

MP-912 51' - 59'

8900 51' - 59'

- 1) Support towers for the divider heads on the inner and outer wings must be shortened to 12" long. This prevents interference when folding up.
- 2) Unit should be winged up **before** all hose routings are complete to check for interference especially at the hinge points.
- 3) Extra secondary (1") hose may be required to complete all hose routings.
- 4) Primary hoses (2 1/2") must be tight as possible with little or no sag across the cultivator.

Cut 12" from top of hose couplers to lower for better hose routing.



PRIMARY HOSE COUPLERS
MOUNTED 14" FROM CULTIVATOR CENTRE LINE
59' SHOWN

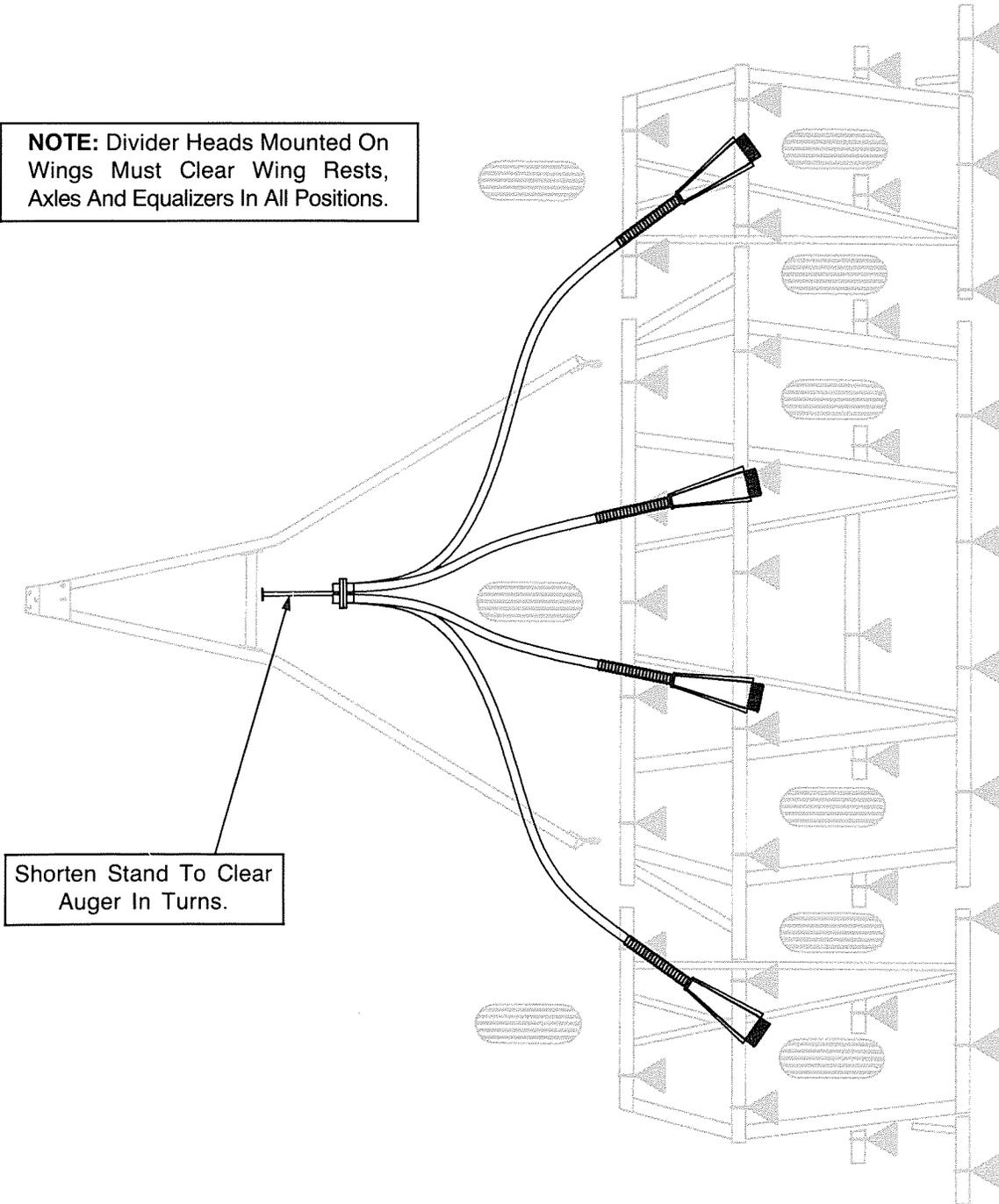
DISTRIBUTION HEAD SIZES					
Size	Outer Wing	Inner Wing	Centre	Inner Wing	Outer Wing
51'	8	9	8, 9	9	8
53'	9	9	8, 9	9	9
55'	9	9	10, 9	9	9
57'	9	10	10, 9	10	9
59'	10	10	10, 9	10	10

Setup

7.6.7 TOW BETWEEN AIR HOSE ROUTING

9" SPACING.
8900 25' - 29'

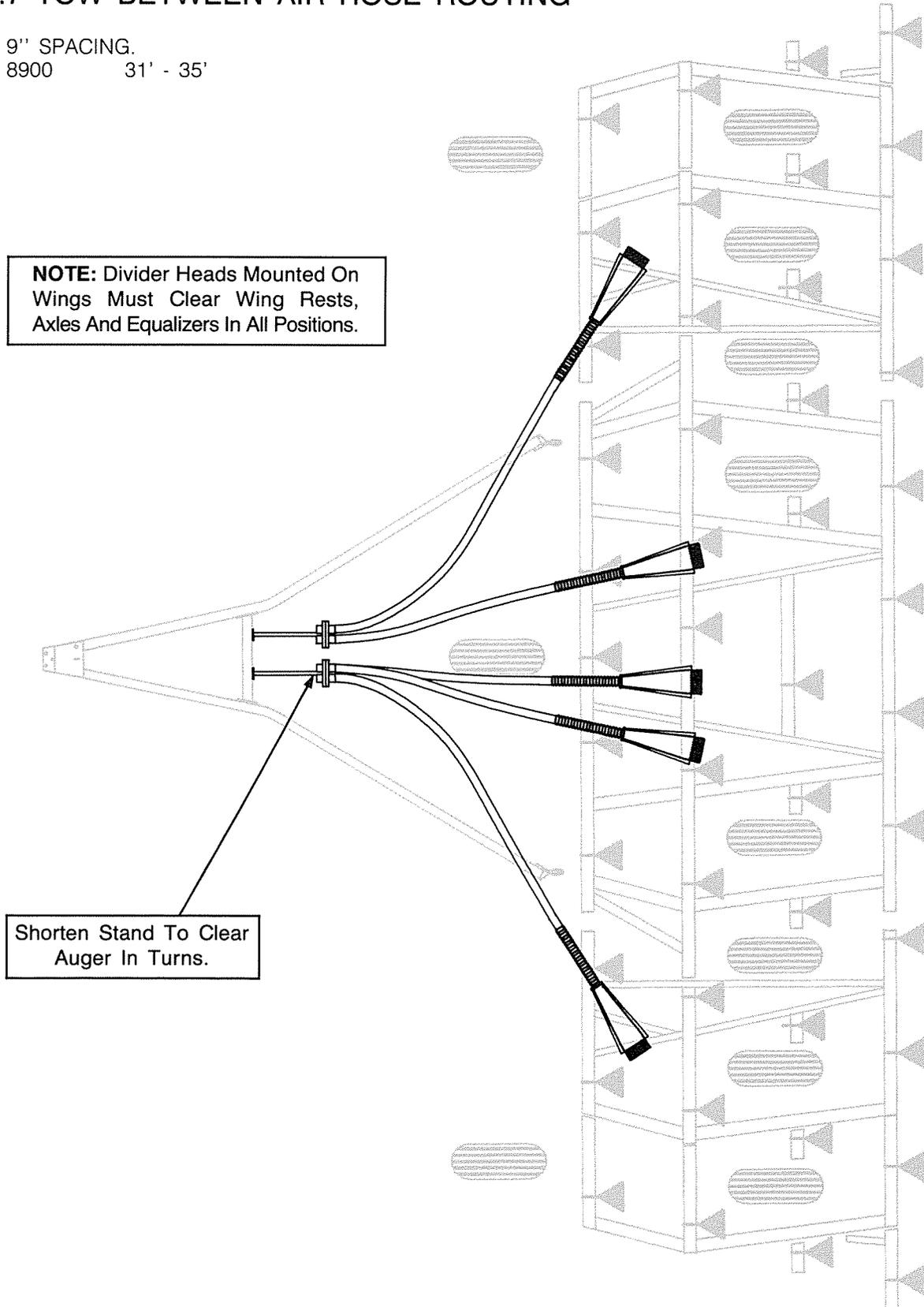
NOTE: Divider Heads Mounted On Wings Must Clear Wing Rests, Axles And Equalizers In All Positions.



7.6.7 TOW BETWEEN AIR HOSE ROUTING

9" SPACING.
8900 31' - 35'

NOTE: Divider Heads Mounted On Wings Must Clear Wing Rests, Axles And Equalizers In All Positions.

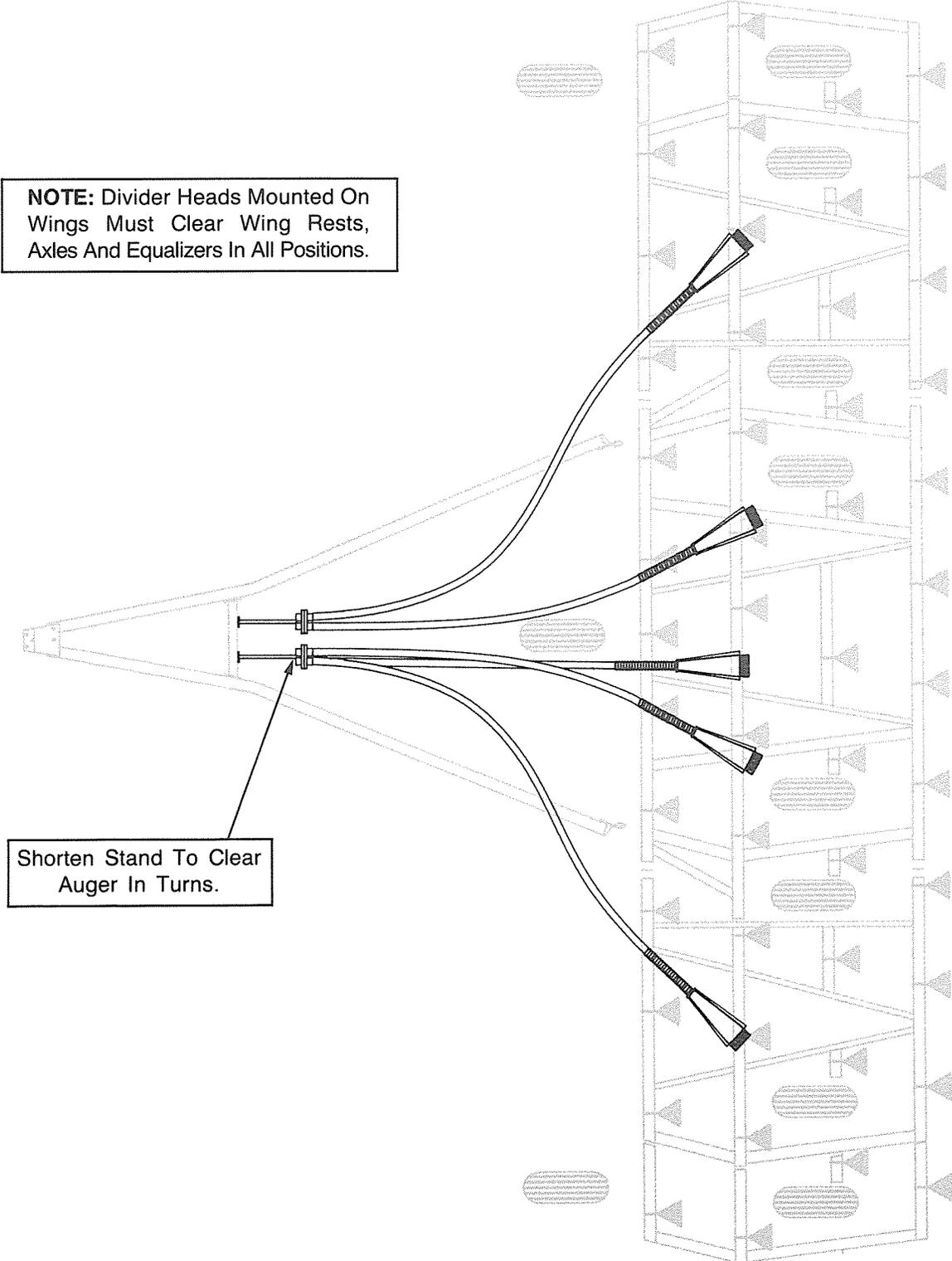


Setup

7.6.7 TOW BETWEEN AIR HOSE ROUTING (Continued)

9' SPACING.
8900 31' - 37'

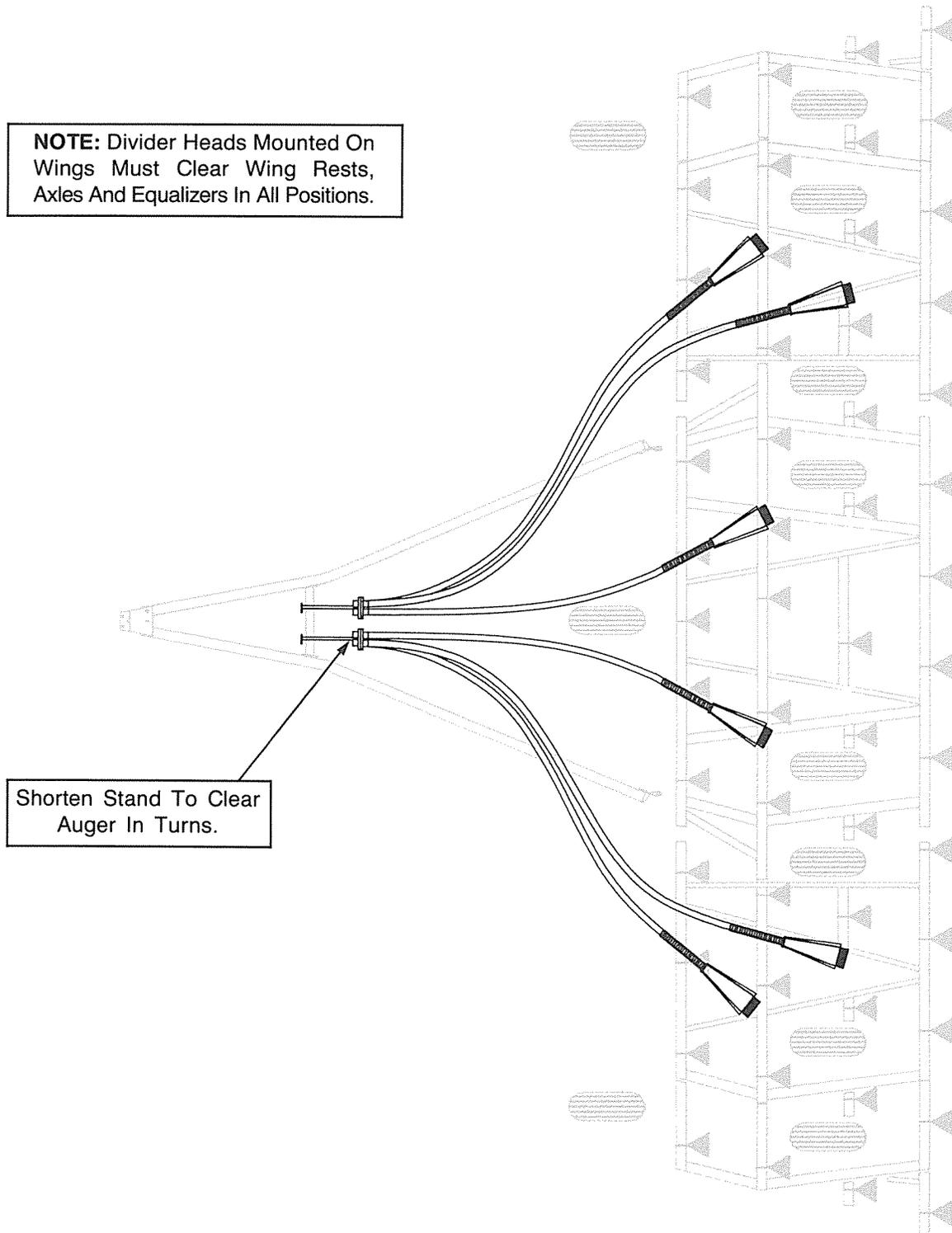
NOTE: Divider Heads Mounted On Wings Must Clear Wing Rests, Axles And Equalizers In All Positions.



7.6.7 TOW BETWEEN AIR HOSE ROUTING (Continued)

9" SPACING.
8900 39' - 41'

NOTE: Divider Heads Mounted On Wings Must Clear Wing Rests, Axles And Equalizers In All Positions.



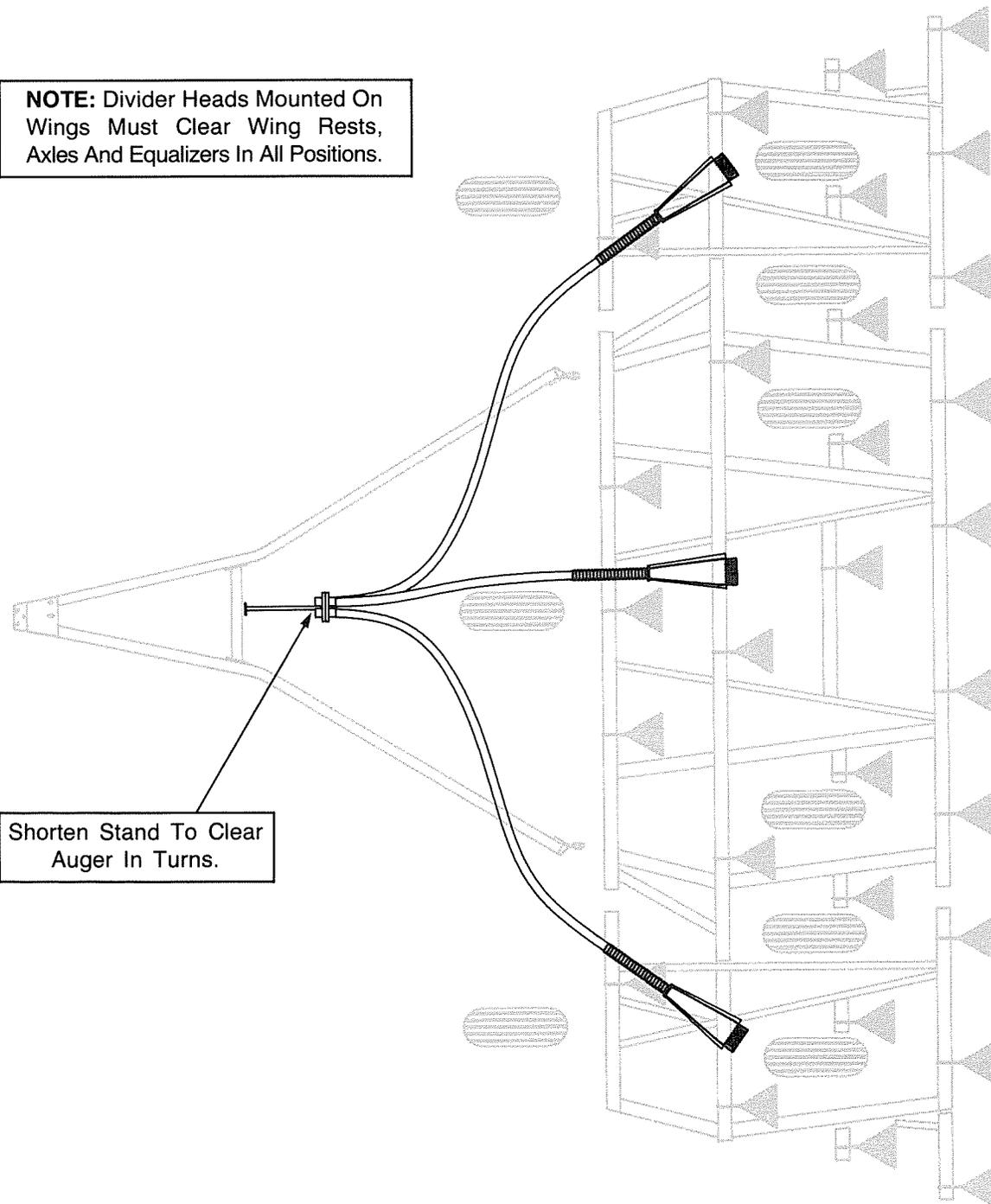
Shorten Stand To Clear Auger In Turns.

Setup

7.6.7 TOW BETWEEN AIR HOSE ROUTING (Continued)

12'' SPACING.
8900 25' - 29'

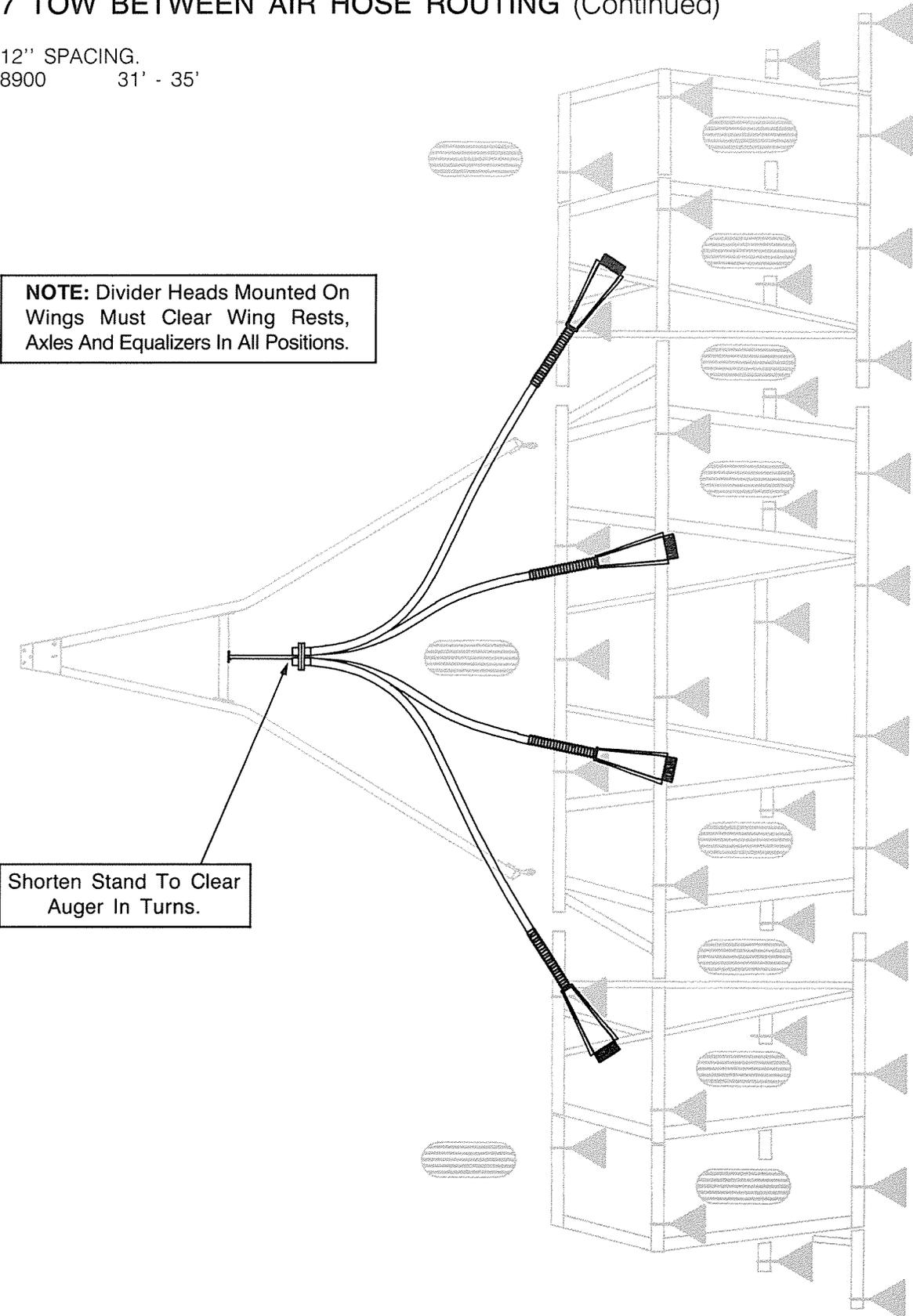
NOTE: Divider Heads Mounted On Wings Must Clear Wing Rests, Axles And Equalizers In All Positions.



7.6.7 TOW BETWEEN AIR HOSE ROUTING (Continued)

12" SPACING.
8900 31' - 35'

NOTE: Divider Heads Mounted On Wings Must Clear Wing Rests, Axles And Equalizers In All Positions.



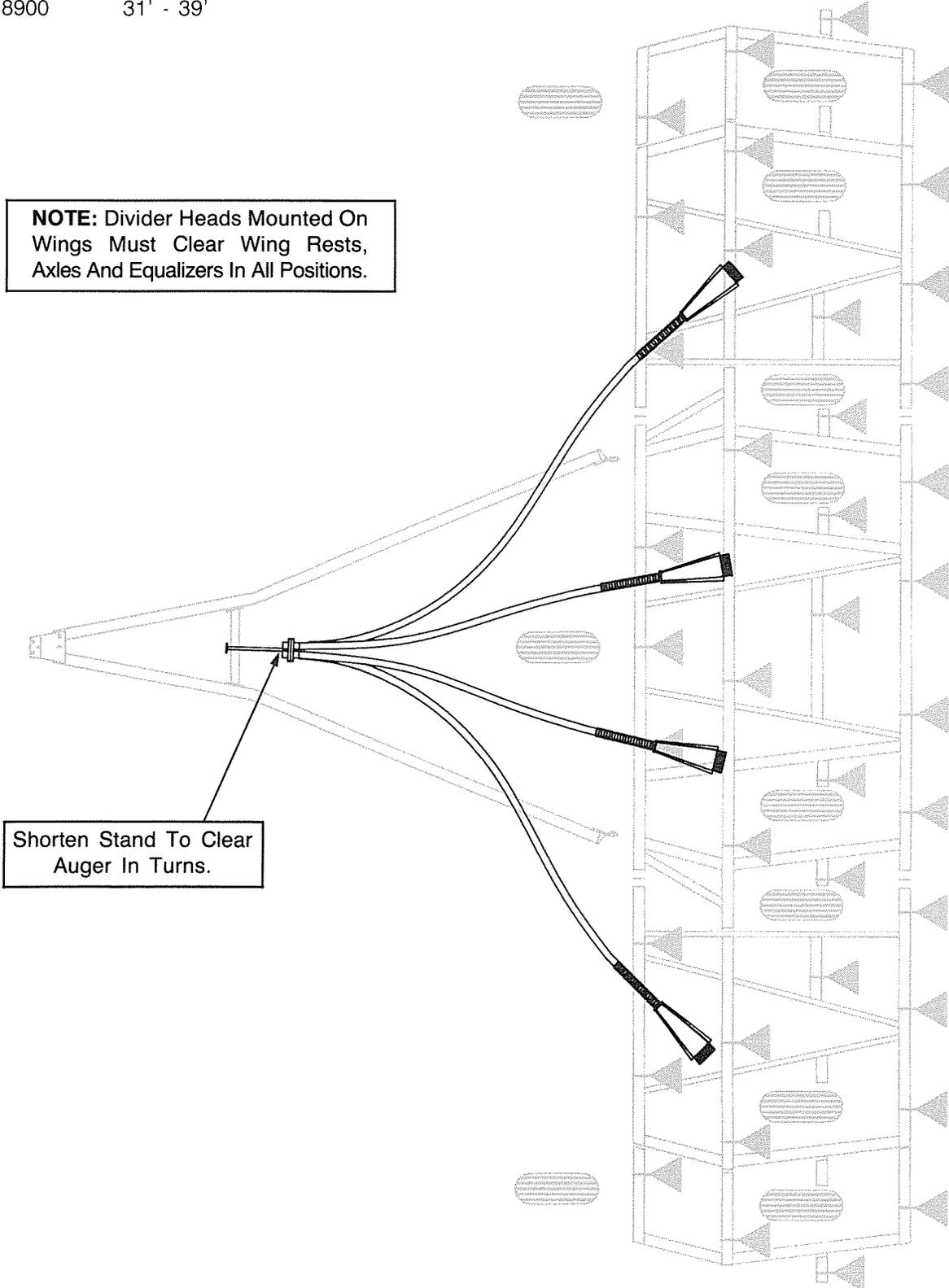
Shorten Stand To Clear Auger In Turns.

Setup

7.6.7 TOW BETWEEN AIR HOSE ROUTING (Continued)

12" SPACING.
8900 31' - 39'

NOTE: Divider Heads Mounted On Wings Must Clear Wing Rests, Axles And Equalizers In All Positions.



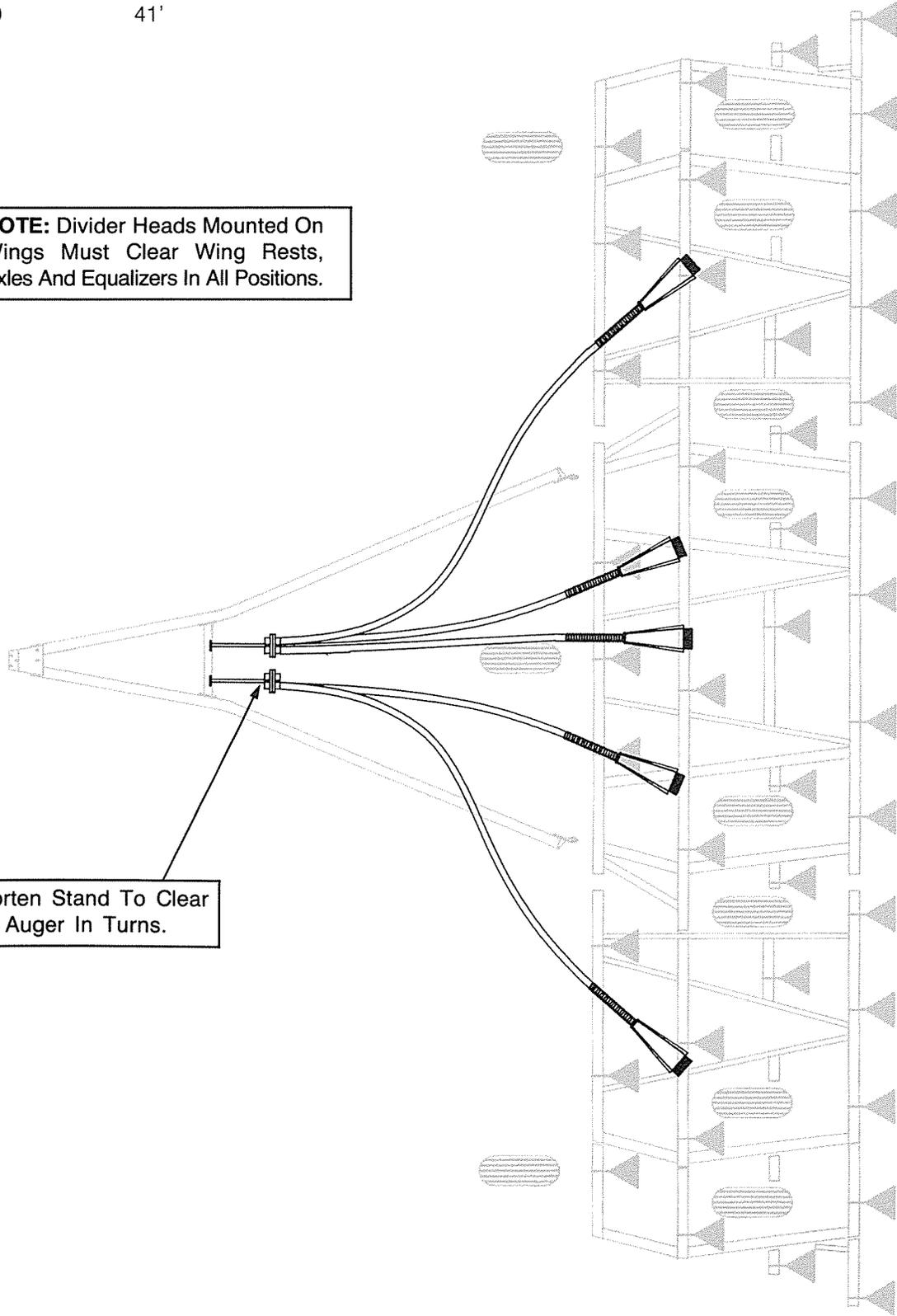
Shorten Stand To Clear Auger In Turns.

7.6.7 TOW BETWEEN AIR HOSE ROUTING (Continued)

12" SPACING.
8900 41'

NOTE: Divider Heads Mounted On Wings Must Clear Wing Rests, Axles And Equalizers In All Positions.

Shorten Stand To Clear Auger In Turns.



Setup

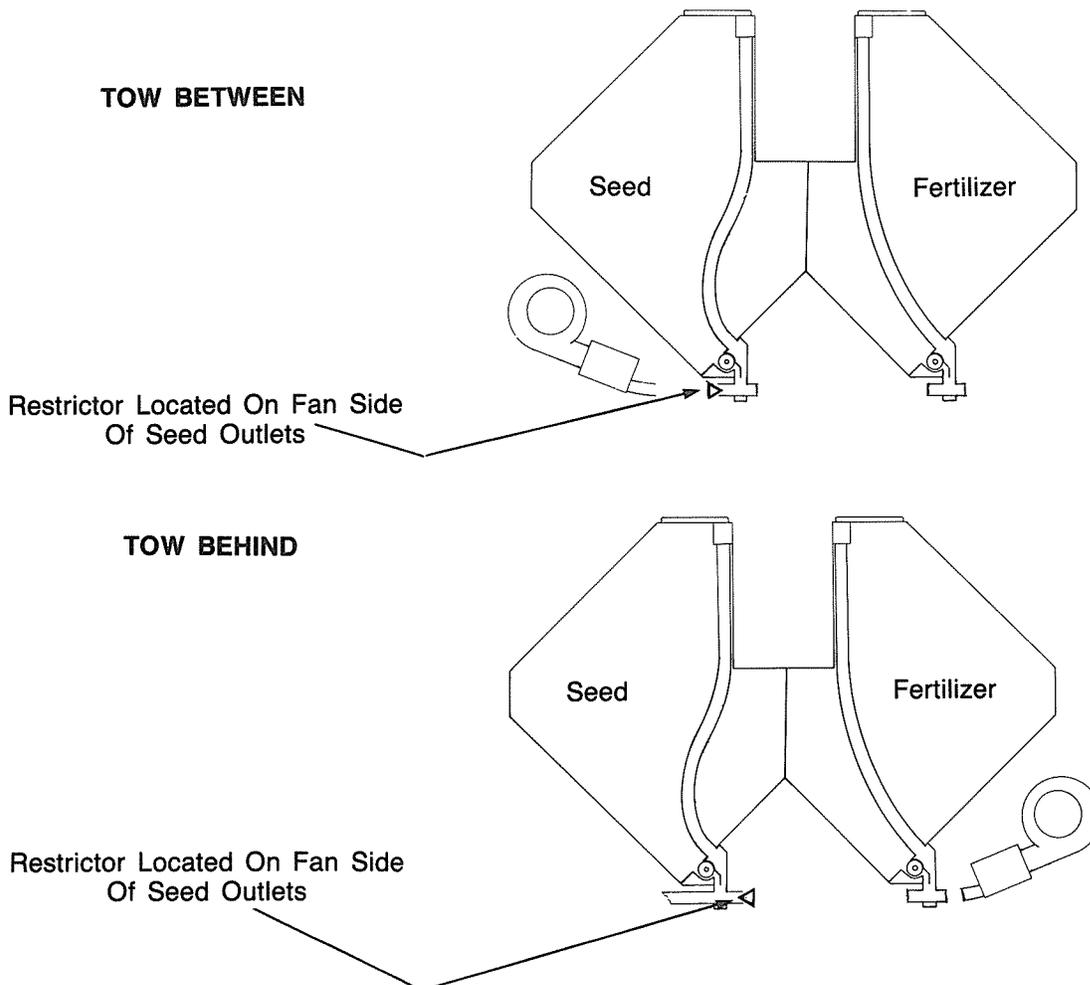
7.7 DOUBLE SHOOTING

This is where TWO DIFFERENT products are placed at TWO DIFFERENT positions in the ground.

There has to be two separate air systems to be able to Double Shoot.

The metering wheels and spacers are set up in the metering body the same way as in Section 7.6.2. However, because of Double Shooting the collector is different for the first 40 runs on the 6130 and for the first 50 runs on the 6180, 6240 & 6300. Instead of 6 outlets the 6130 collector has 8 outlets, 4 of which have openings to allow product to be dropped into the airstream while the other 4 are solid only allowing air to travel through the part. Instead of 8 outlets the 6180, 6240 & 6300 has 10 outlets, 5 of which have openings to allow product to be dropped into the air stream while the other 5 are solid only allowing air to travel through the part.

The 6130 can Double shoot up to 60 runs. Illustrated on page 7.39 is the set up required for the metering bodies. The 6180, 6240 & 6300 can Double shoot up to 80 runs. Illustrated on page 7.40 is the set up required for the metering bodies.

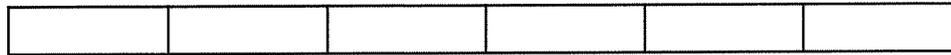


A restrictor is installed into the inlet of the seed tubes of the collector located on the seed tank in both the tow behind and tow between models.

7.7 DOUBLE SHOOTING (Continued)

Model 6130 - 130 bu. tank.

Metering Wheel Size And Location Chart



Meter Body Looking From The Front When Installed

# RUNS	METER WHEEL SIZE FOR BOTH FRONT AND REAR METER BODIES					
21	7	*	*	*	7	7
22	8	*	*	*	7	7
23	8	*	*	*	7	8
24	8	*	*	*	8	8
25	8	*	*	*	8	9
26	9	*	*	*	8	9
27	9	*	*	*	9	9
28	9	*	*	*	9	10
29	10	*	*	*	9	10
30	10	*	*	*	10	10
31	8	8	*	*	7	8
32	8	8	*	*	8	8
33	8	8	*	*	8	9
34	9	8	*	*	8	9
35	9	9	*	*	8	9
36	9	9	*	*	9	9
37	9	9	*	*	9	10
38	10	9	*	*	9	10
39	10	9	*	*	10	10
40	10	10	*	*	10	10
41	8	8	*	8	8	9
42	9	8	*	8	8	9
43	9	9	*	8	8	9
44	9	9	*	8	9	9
45	9	9	*	9	9	9
46	10	9	*	9	9	9
47	10	9	*	9	9	10
48	10	10	*	9	9	10
49	10	10	*	9	10	10
50	10	10	*	10	10	10
51	9	9	8	8	8	9
52	9	9	8	8	9	9
53	9	9	8	9	9	9
54	9	9	9	9	9	9
55	10	9	9	9	9	9
56	10	9	9	9	9	10
57	10	9	9	9	10	10
58	10	10	9	9	10	10
59	10	10	9	10	10	10
60	10	10	10	10	10	10

* INSTALL BLANK OFF COVER PLATES

Setup

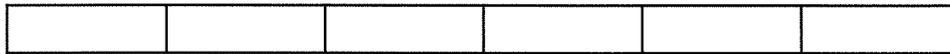
7.7 DOUBLE SHOOTING (Continued)

Model 6180 - 180 bu. tank

Model 6240 - 240 bu. tank

Model 6300 - 300 bu. tank

Metering Wheel Size And Location Chart



Meter Body Looking From The Front When Installed

# RUNS	METER WHEEL SIZE FOR BOTH FRONT AND REAR BODIES							
25	8	*	*	9	*	*	*	8
26	9	*	*	8	*	*	*	9
27	9	*	*	9	*	*	*	9
28	9	*	*	10	*	*	*	9
29	10	*	*	9	*	*	*	10
30	10	*	*	10	*	*	*	10
31	8	8	*	*	*	7	*	8
32	8	8	*	*	*	8	*	8
33	8	8	*	*	*	8	*	9
34	9	8	*	*	*	8	*	9
35	9	9	*	*	*	8	*	9
36	9	9	*	*	*	9	*	9
37	9	9	*	*	*	9	*	10
38	10	9	*	*	*	9	*	10
39	10	9	*	*	*	10	*	10
40	10	10	*	*	*	10	*	10
41	8	8	*	8	*	8	*	9
42	9	8	*	8	*	8	*	9
43	9	8	*	8	*	9	*	9
44	9	9	*	8	*	9	*	9
45	9	9	*	9	*	9	*	9
46	10	9	*	9	*	9	*	9
47	10	9	*	9	*	9	*	10
48	10	9	*	9	*	10	*	10
49	10	10	*	9	*	10	*	10
50	10	10	*	10	*	10	*	10

*INSTALL BLANK OFF COVER PLATES

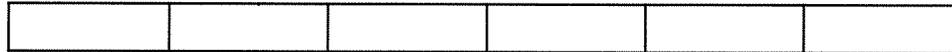
7.7 DOUBLE SHOOTING (Continued)

Model 6180 - 180 bu. tank

Model 6240 - 240 bu. tank

Model 6300 - 300 bu. tank

Metering Wheel Size And Location Chart



Meter Body Looking From The Front When Installed

# RUNS	METER WHEEL SIZE FOR BOTH FRONT AND REAR BODIES							
51	9	9	8	*	*	8	8	9
52	9	9	8	*	*	8	9	9
53	9	9	8	*	*	9	9	9
54	9	9	9	*	*	9	9	9
55	10	9	9	*	*	9	9	9
56	10	9	9	*	*	9	9	10
57	10	9	9	*	*	9	10	10
58	10	10	9	*	*	9	10	10
59	10	10	9	*	*	10	10	10
60	10	10	10	*	*	10	10	10
61	9	9	9	*	8	8	9	9
62	9	9	9	*	8	9	9	9
63	9	9	9	*	9	9	9	9
64	10	9	9	*	9	9	9	9
65	10	9	9	*	9	9	9	10
66	10	10	9	*	9	9	9	10
67	10	10	9	*	9	9	10	10
68	10	10	9	*	9	10	10	10
69	10	10	10	*	9	10	10	10
70	10	10	10	*	10	10	10	10
71	9	9	9	8	9	9	9	9
72	9	9	9	9	9	9	9	9
73	10	9	9	9	9	9	9	9
74	10	9	9	9	9	9	9	10
75	10	10	9	9	9	9	9	10
76	10	10	9	9	9	9	10	10
77	10	10	10	9	9	9	10	10
78	10	10	10	9	9	10	10	10
79	10	10	10	9	10	10	10	10
80	10	10	10	10	10	10	10	10

* INSTALL BLANK OFF COVER PLATES

Setup

7.7.1 PRIMARY HOSE INSTALLATION

Follow guidelines as listed in Section 7.6.4 for general set up.

Double shooting requires that the 2 1/2" diameter hoses running between the two metering bodies be connected as shown in the following illustrations. Figures 44 and 45 for the 6130, and Figures 46, 47 and 48 for the 6180.

IMPORTANT: If this is not done then mixing of the two products will occur.

TOW BETWEEN

21 - 30 RUN DISTRIBUTION (Model 6130 Only)

For units that are Double Shooting up to 30 runs the plenum should have hoses cut to the required length and attached using the following pattern on the plenum. All unused outlets must be sealed using the plastic caps and hose clamps (See Fig. 44)

Connect outlets 1 to 1 to 1, 2 to 2 to 2, etc.

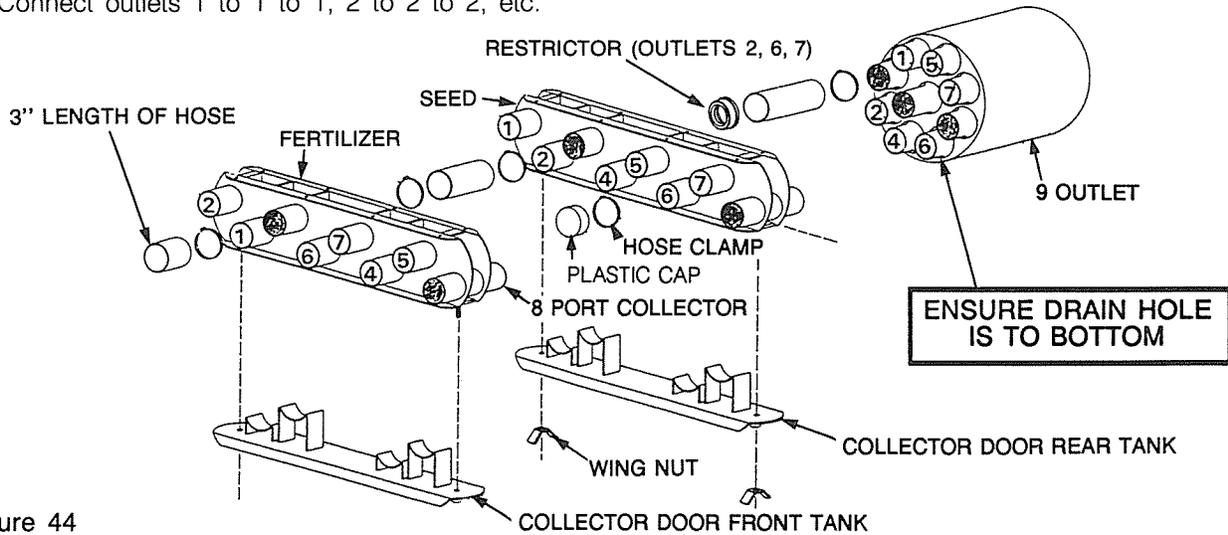


Figure 44

TOW BEHIND

21 - 30 RUN DISTRIBUTION (Model 6130 Only)

The hoses should be cut to the required length and attached using the following pattern on the plenum. (See Fig. 45). Any unused outlets must be sealed using the plastic caps and hose clamps provided.

Connect outlets 1 to 1 to 1, 2 to 2 to 2, etc.

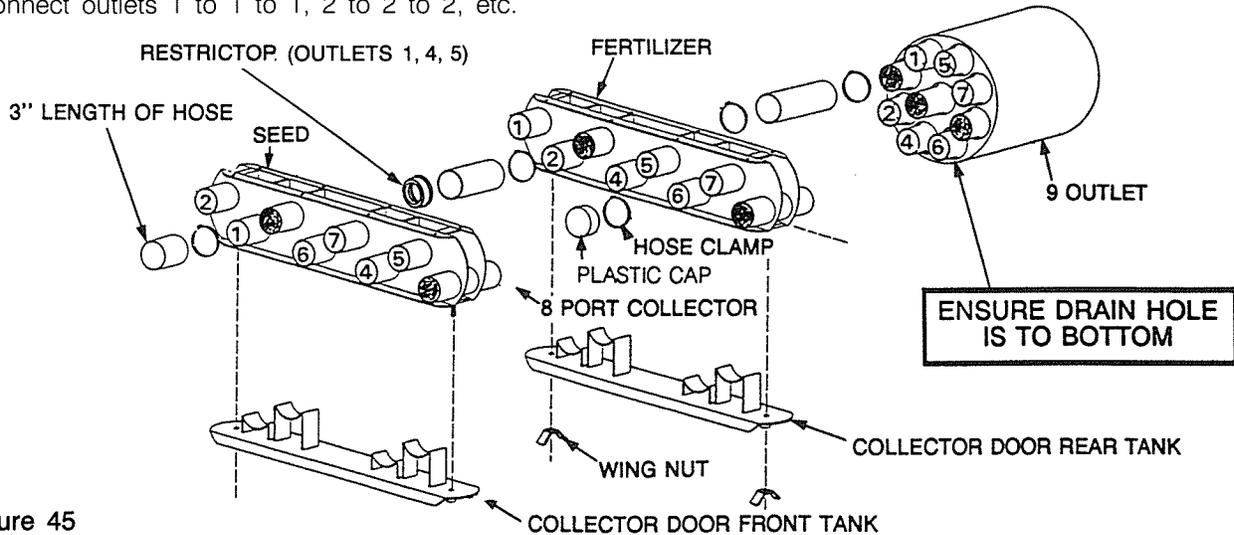


Figure 45

7.7.1 PRIMARY HOSE INSTALLATION (Continued)

TOW BETWEEN

21 - 30 RUN DISTRIBUTION (Model 6180 Only)

The hoses should be cut to the required length and attached using the following pattern on the plenum (See Fig. 46). All unused outlets must be sealed using the plastic caps and hose clamps. Connect outlets 1 to 1 to 1, 2 to 2 to 2, etc.

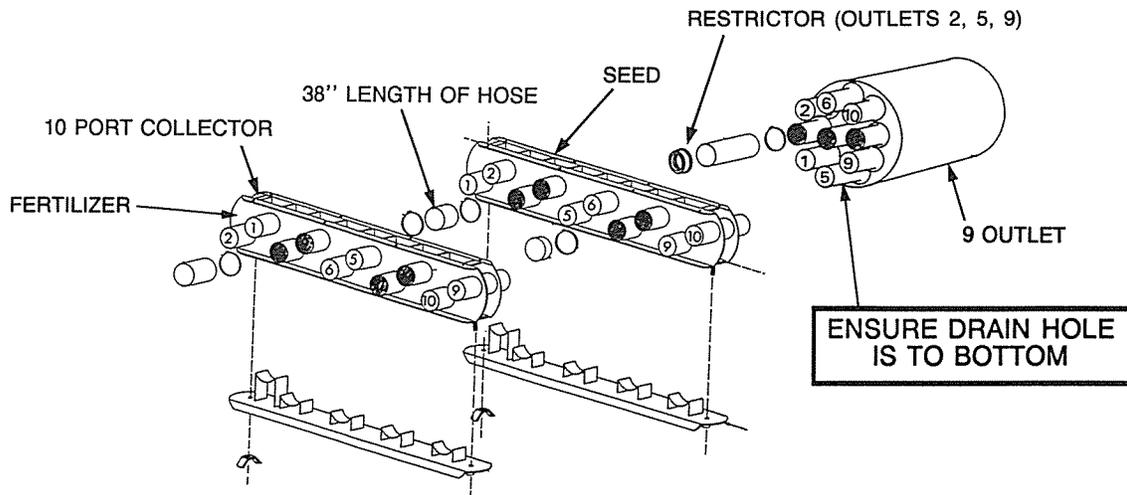


Figure 46

TOW BEHIND

21 - 30 RUN DISTRIBUTION (Model 6180, 6240 & 6300)

The hoses should be cut to the required length and attached using the following pattern on the plenum. (See Fig. 47). Any unused outlets must be sealed using the plastic caps and hose clamps provided. Connect outlets 1 to 1 to 1, 2 to 2 to 2, etc.

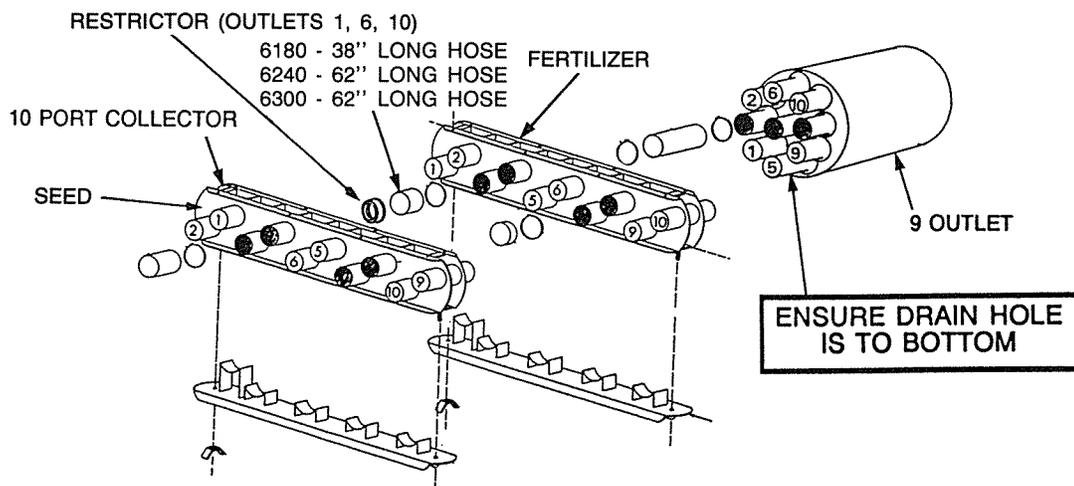


Figure 47

Setup

7.7.1 PRIMARY HOSE INSTALLATION (Continued)

TOW BETWEEN

31 - 40 RUN DISTRIBUTION (Model 6130 Only)

The hoses should be cut to the required length and attached using the following pattern on the plenum (See Fig. 48). All unused outlets must be sealed using the plastic caps and hose clamps.

Connect outlets 1 to 1 to 1, 2 to 2 to 2, etc.

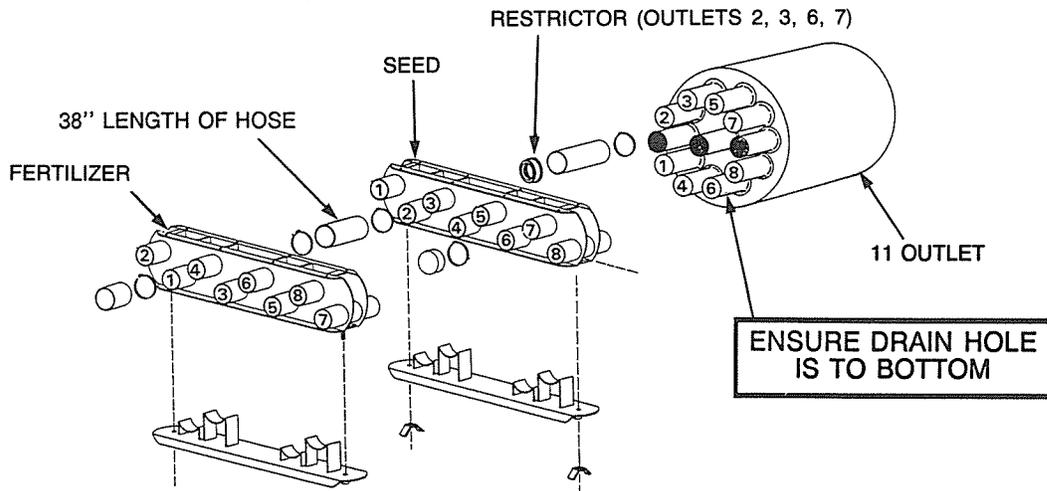


Figure 48

TOW BEHIND

31 - 40 RUN DISTRIBUTION (Model 6130 Only)

The hoses should be cut to the required length and attached using the following pattern on the plenum. (See Fig. 49). Any unused outlets must be sealed using the plastic caps and hose clamps provided.

Connect outlets 1 to 1 to 1, 2 to 2 to 2, etc.

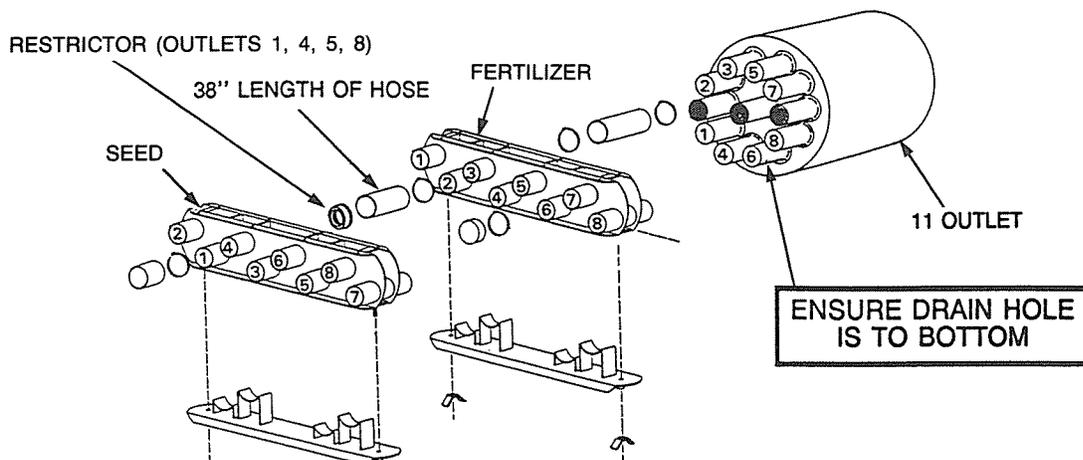


Figure 49

7.7.1 PRIMARY HOSE INSTALLATION (Continued)

TOW BETWEEN

31 - 40 RUN DISTRIBUTION (Model 6180 Only)

The hoses should be cut to the required length and attached using the following pattern on the plenum (See Fig. 50). All unused outlets must be sealed using the plastic caps and hose clamps. Connect outlets 1 to 1 to 1, 2 to 2 to 2, etc.

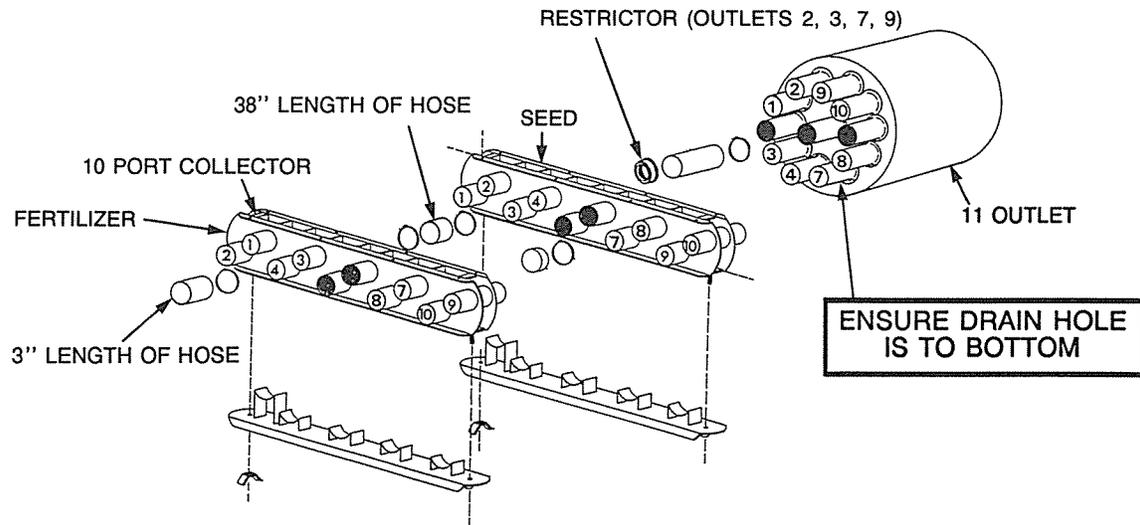


Figure 50

TOW BEHIND

31 - 40 RUN DISTRIBUTION (Model 6180, 6240 & 6300)

The hoses should be cut to the required length and attached using the following pattern on the plenum. (See Fig. 51). Any unused outlets must be sealed using the plastic caps and hose clamps provided. Connect outlets 1 to 1 to 1, 2 to 2 to 2, etc.

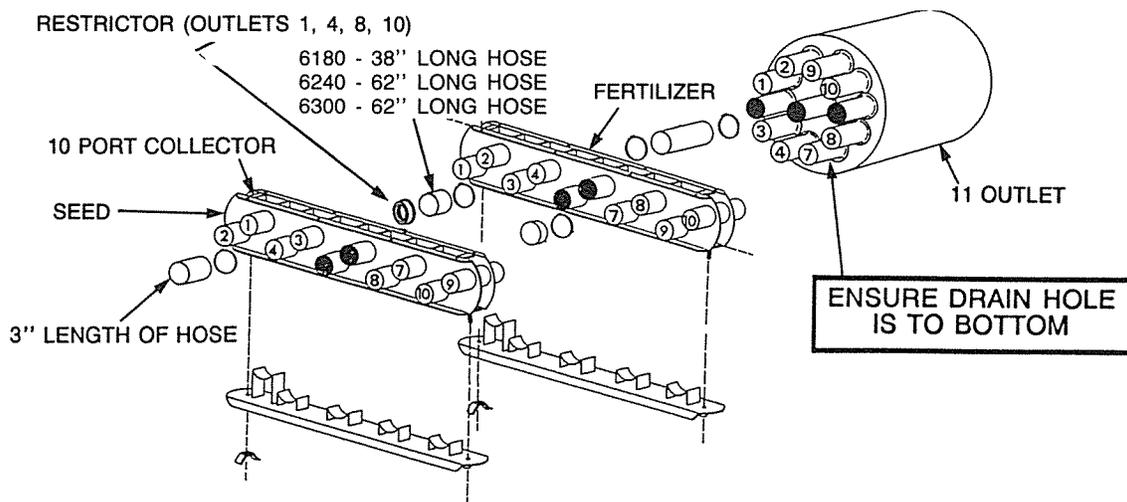


Figure 51

Setup

7.7.1 PRIMARY HOSE INSTALLATION (Continued)

TOW BETWEEN

41 - 50 RUN DISTRIBUTION (Model 6130 Only)

The hoses should be cut to the required length and attached using the following pattern on the plenum (See Fig. 52). All unused outlets must be sealed using the plastic caps and hose clamps. Connect outlets 1 to 1 to 1, 2 to 2 to 2, etc.

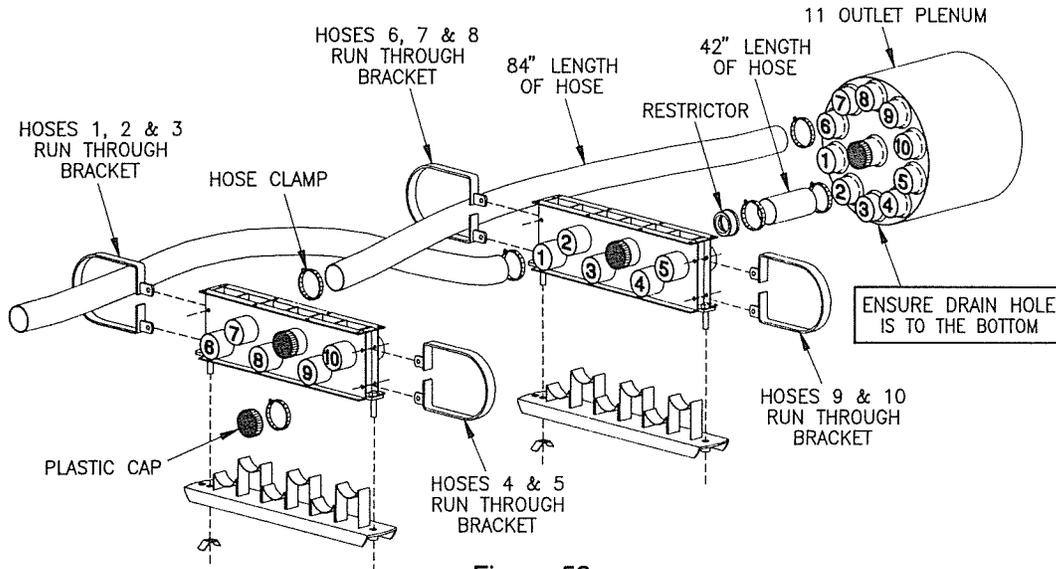


Figure 52

TOW BEHIND

41 - 50 RUN DISTRIBUTION (Model 6130 Only)

The hoses should be cut to the required length and attached using the following pattern on the plenum (See Fig. 53). Any unused outlets must be sealed using the plastic caps and hose clamps provided. Connect outlets 1 to 1 to 1, 2 to 2 to 2, etc.

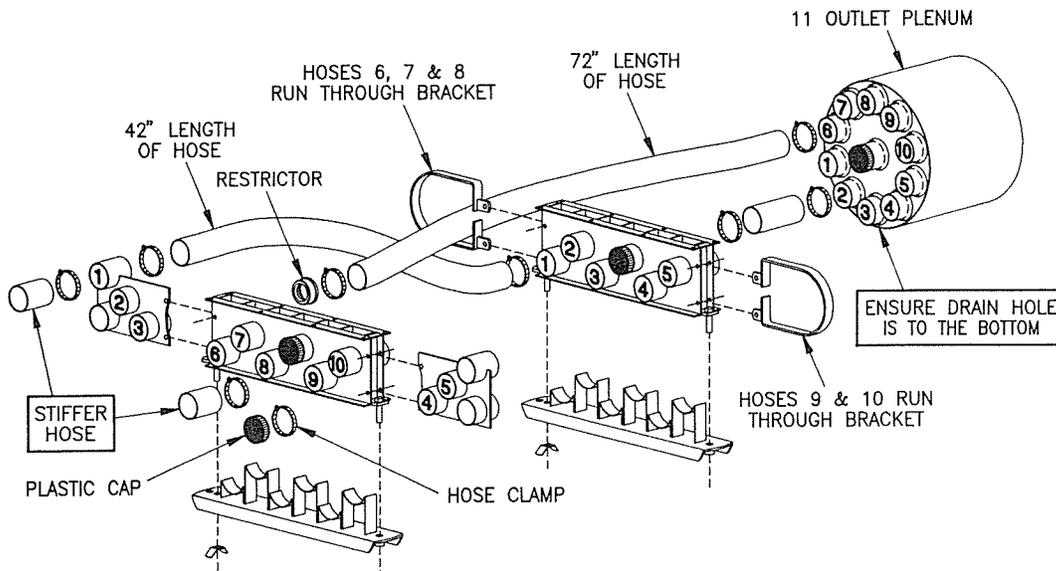


Figure 53

7.7.1 PRIMARY HOSE INSTALLATION (Continued)

TOW BETWEEN

41 - 50 RUN DISTRIBUTION (Model 6180 Only)

The hoses should be cut to the required length and attached using the following pattern on the plenum (See Fig. 54). All unused outlets must be sealed using the plastic caps and hose clamps.

Connect outlets 1 to 1 to 1, 2 to 2 to 2, etc.

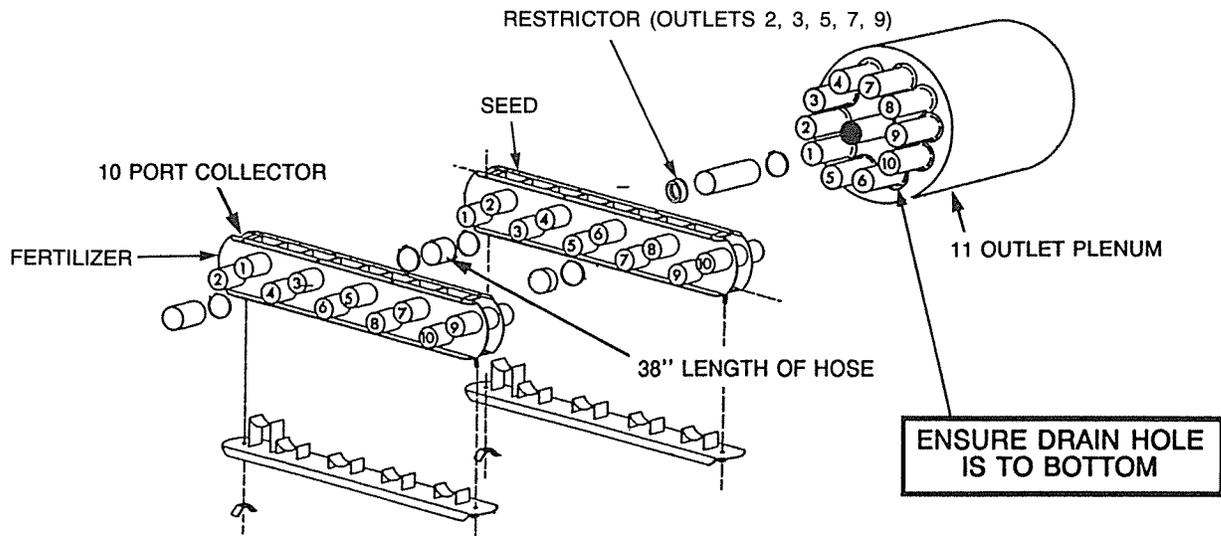


Figure 54

TOW BEHIND

41 - 50 RUN DISTRIBUTION (Model 6180, 6240 & 6300)

The hoses should be cut to the required length and attached using the following pattern on the plenum (See Fig. 55). Any unused outlets must be sealed using the plastic caps and hose clamps provided.

Connect outlets 1 to 1 to 1, 2 to 2 to 2, etc.

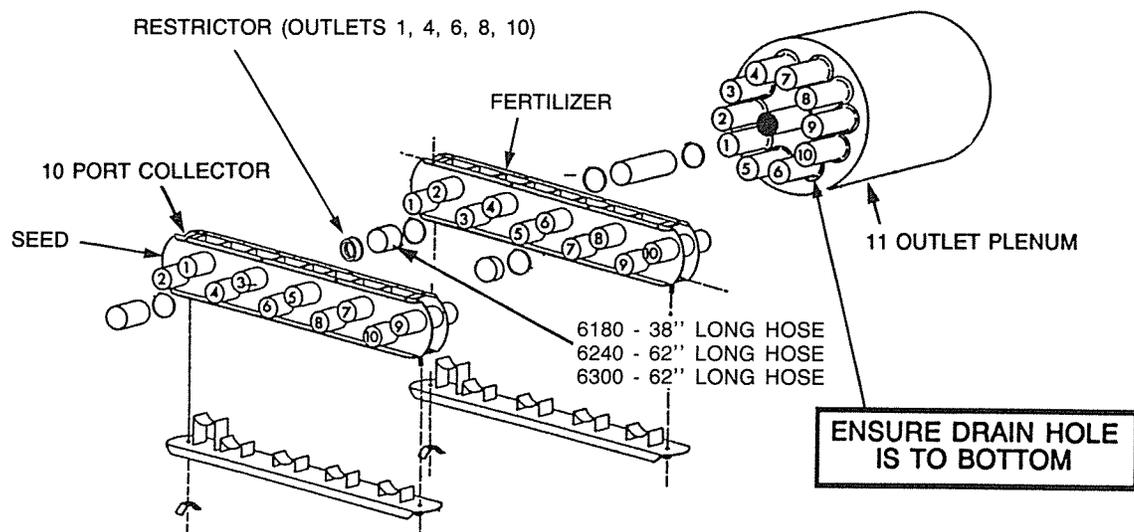


Figure 55

Setup

7.7.1 PRIMARY HOSE INSTALLATION (Continued)

TOW BETWEEN

51 - 60 RUN DISTRIBUTION (Model 6130 Only)

The hoses should be cut to the required length and attached using the following pattern on the plenum (See Fig. 56). All unused outlets must be sealed using the plastic caps and hose clamps. Connect outlets 1 to 1 to 1, 2 to 2 to 2, etc.

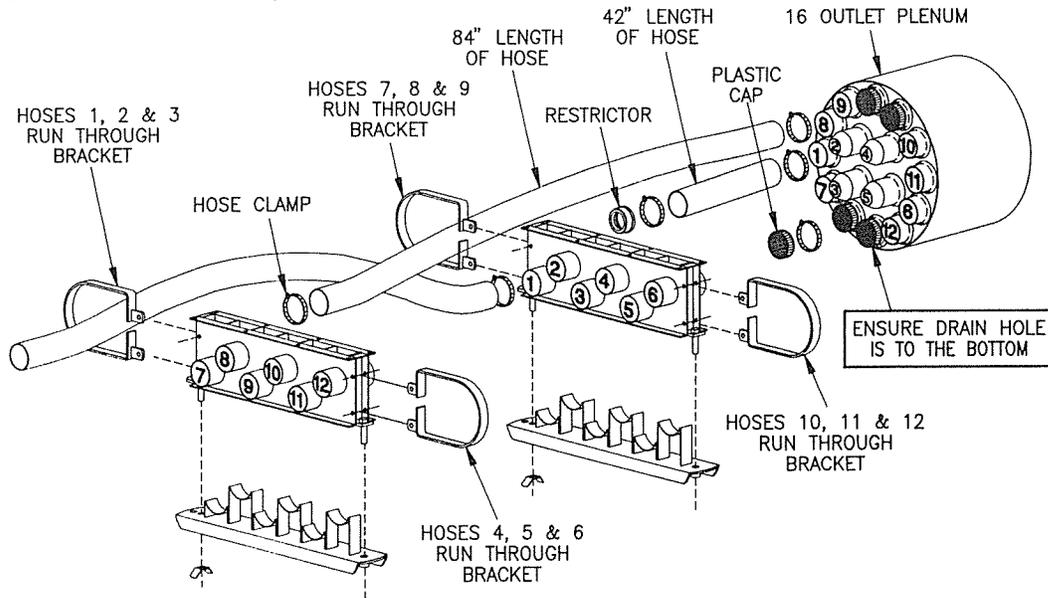


Figure 56

TOW BEHIND

51 - 60 RUN DISTRIBUTION (Model 6130 Only)

The hoses should be cut to the required length and attached using the following pattern on the plenum. (See Fig. 57). Any unused outlets must be sealed using the plastic caps and hose clamps provided. Connect outlets 1 to 1 to 1, 2 to 2 to 2, etc.

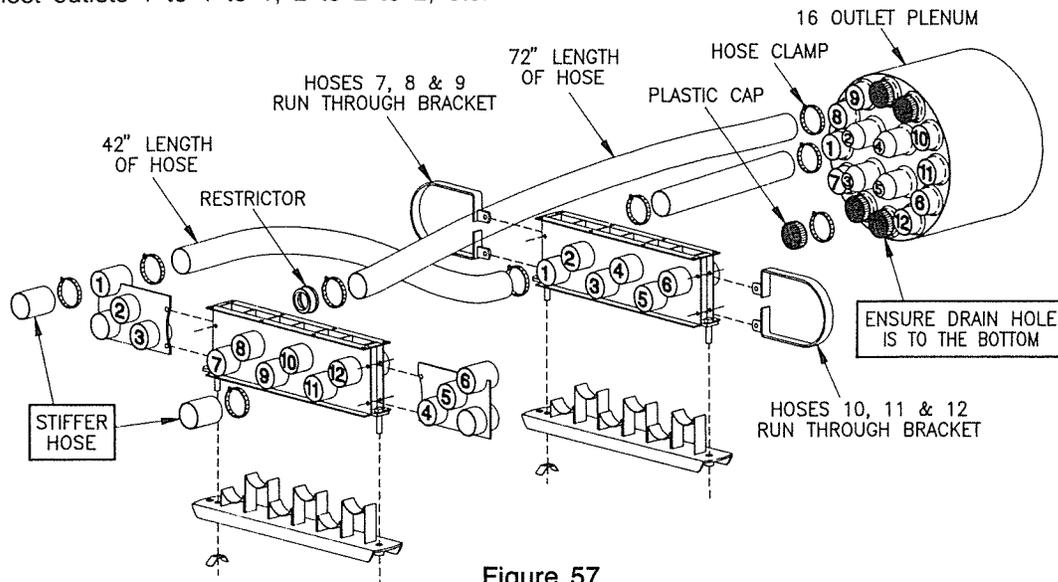


Figure 57

7.7.1 PRIMARY HOSE INSTALLATION (Continued)

TOW BETWEEN

51 - 60 RUN DISTRIBUTION (Model 6180 Only)

The hoses should be cut to the required length and attached using the following pattern on the plenum (See Fig. 58). All unused outlets must be sealed using the plastic caps and hose clamps. Connect outlets 1 to 1 to 1, 2 to 2 to 2, etc.

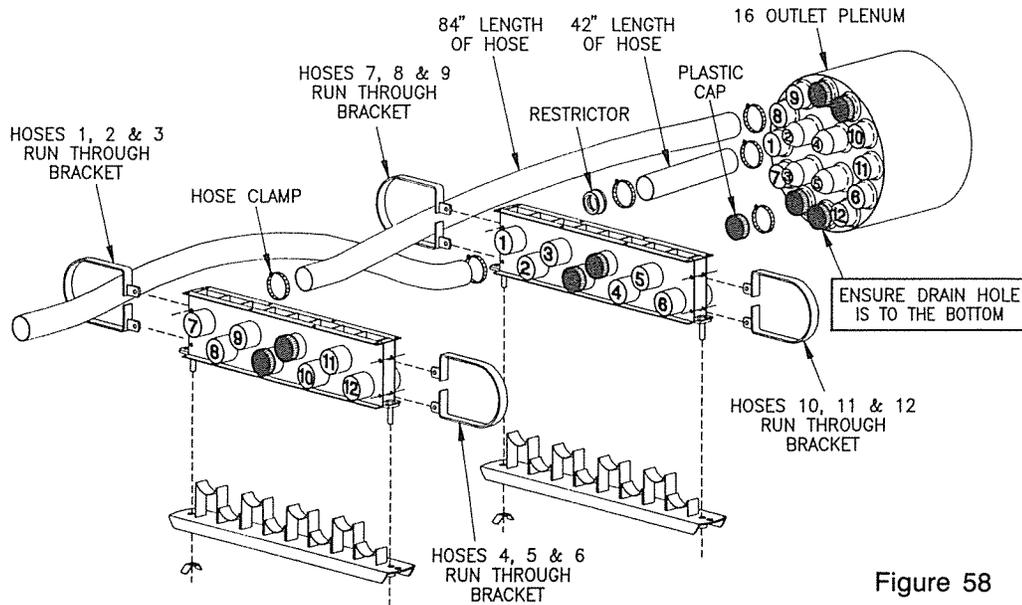


Figure 58

TOW BEHIND

51 - 60 RUN DISTRIBUTION (Model 6180 Only)

The hoses should be cut to the required length and attached using the following pattern on the plenum (See Fig. 59). Any unused outlets must be sealed using the plastic caps and hose clamps provided. Connect outlets 1 to 1 to 1, 2 to 2 to 2, etc.

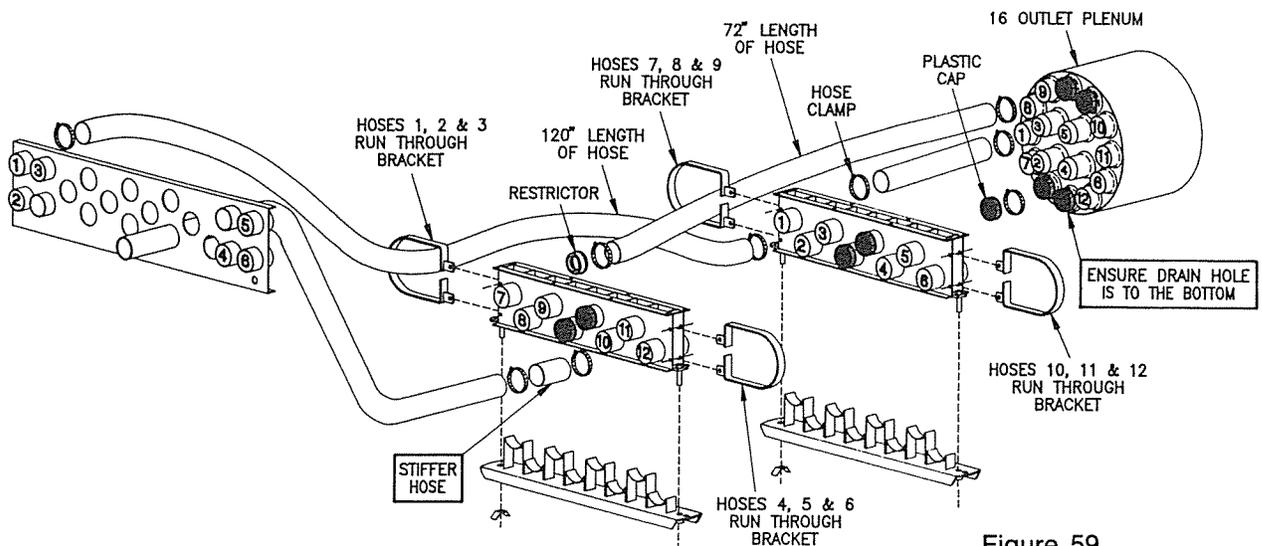


Figure 59

Setup

7.7.1 PRIMARY HOSE INSTALLATION (Continued)

TOW BETWEEN

61 - 70 RUN DISTRIBUTION (Model 6180 Only)

The hoses should be cut to the required length and attached using the following pattern on the plenum (See Fig. 60). All unused outlets must be sealed using the plastic caps and hose clamps. Connect outlets 1 to 1 to 1, 2 to 2 to 2, etc.

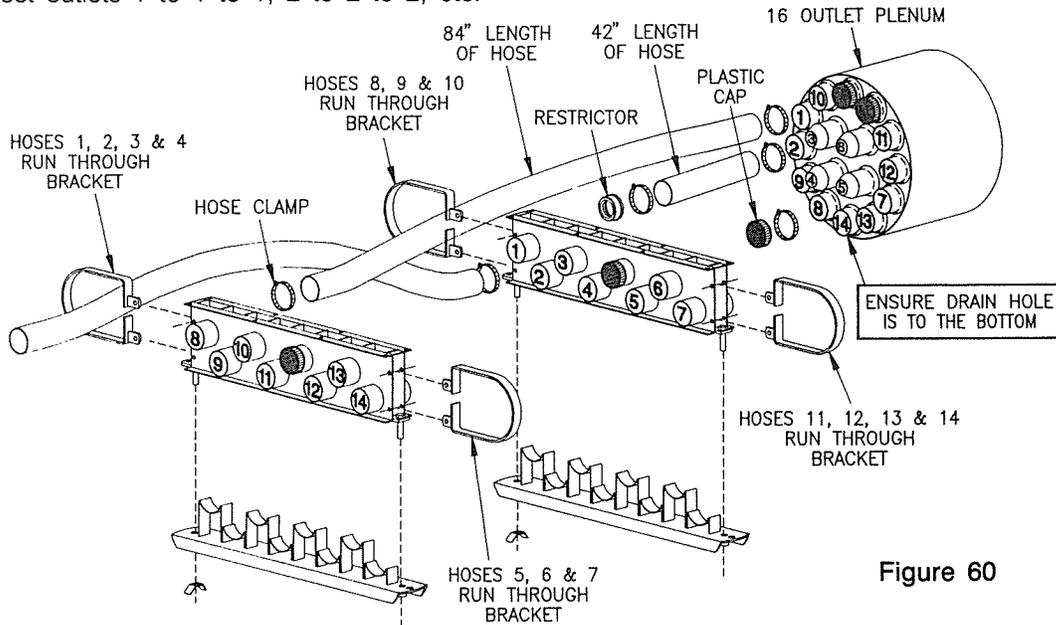


Figure 60

TOW BEHIND

61 - 70 RUN DISTRIBUTION (Model 6180 Only)

The hoses should be cut to the required length and attached using the following pattern on the plenum (See Fig. 61). Any unused outlets must be sealed using the plastic caps and hose clamps provided. Connect outlets 1 to 1 to 1, 2 to 2 to 2, etc.

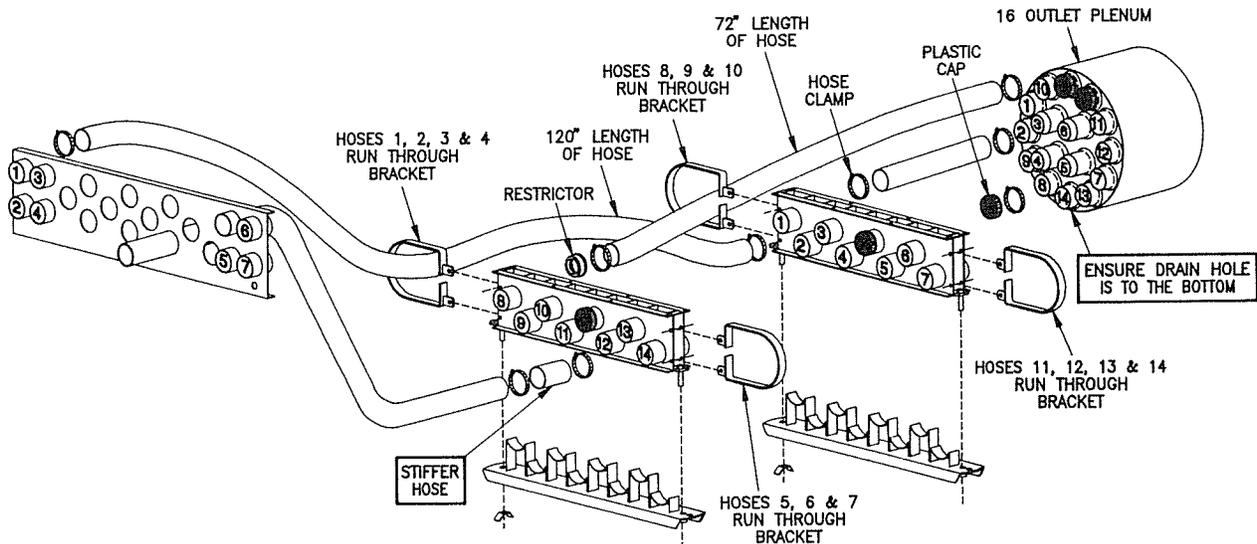


Figure 61

7.7.1 PRIMARY HOSE INSTALLATION (Continued)

TOW BETWEEN

71 - 80 RUN DISTRIBUTION (Model 6180 Only)

The hoses should be cut to the required length and attached using the following pattern on the plenum (See Fig. 62). All unused outlets must be sealed using the plastic caps and hose clamps.

Connect outlets 1 to 1 to 1, 2 to 2 to 2, etc.

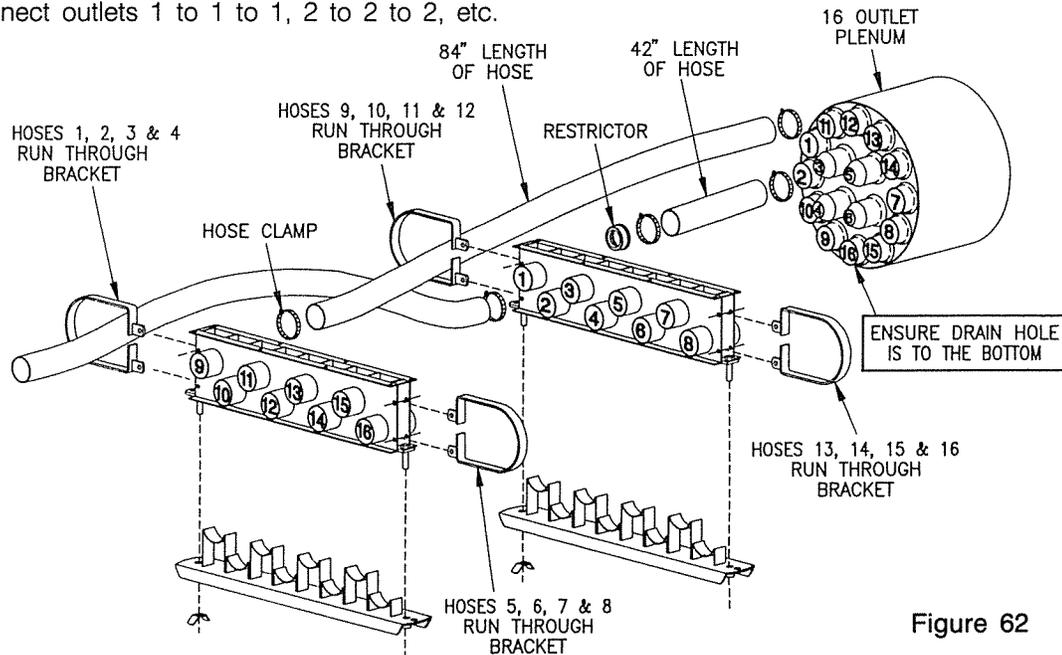


Figure 62

TOW BEHIND

71 - 80 RUN DISTRIBUTION (Model 6180 Only)

The hoses should be cut to the required length and attached using the following pattern on the plenum. (See Fig. 63). Any unused outlets must be sealed using the plastic caps and hose clamps provided.

Connect outlets 1 to 1 to 1, 2 to 2 to 2, etc.

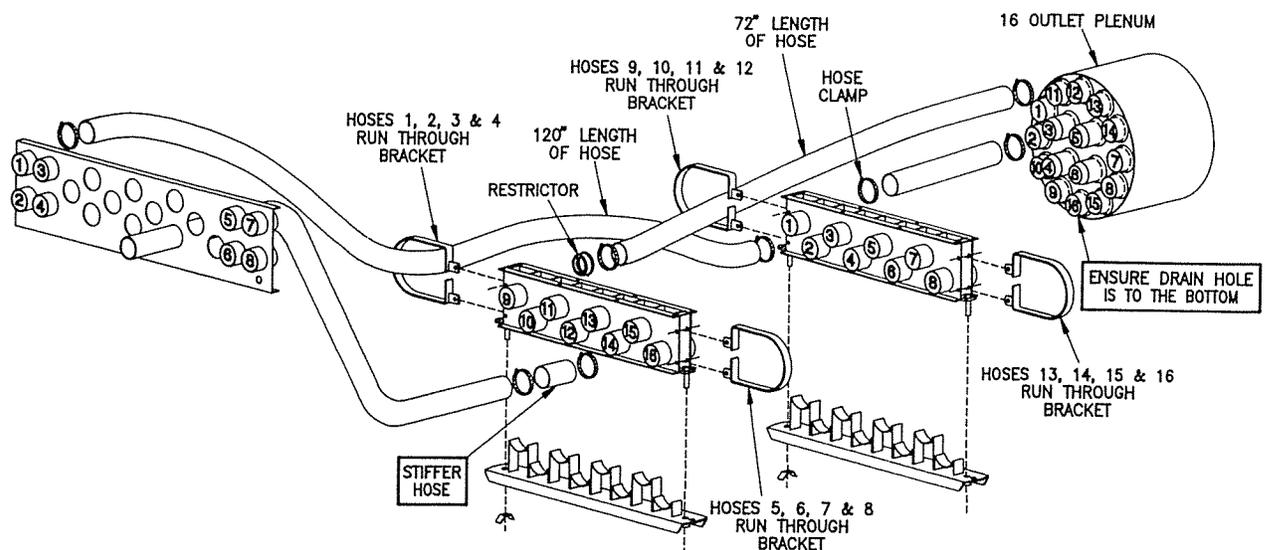


Figure 63

Setup

7.7.1 PRIMARY HOSE INSTALLATION (Continued)

TOW BEHIND

51 - 60 RUN DISTRIBUTION (Model 6240 & 6300 Only)

The hoses should be cut to the required length and attached using the following pattern on the plenum (See Fig. 64). All unused outlets must be sealed using the plastic caps and hose clamps.

Connect outlets 1 to 1 to 1, 2 to 2 to 2, etc.

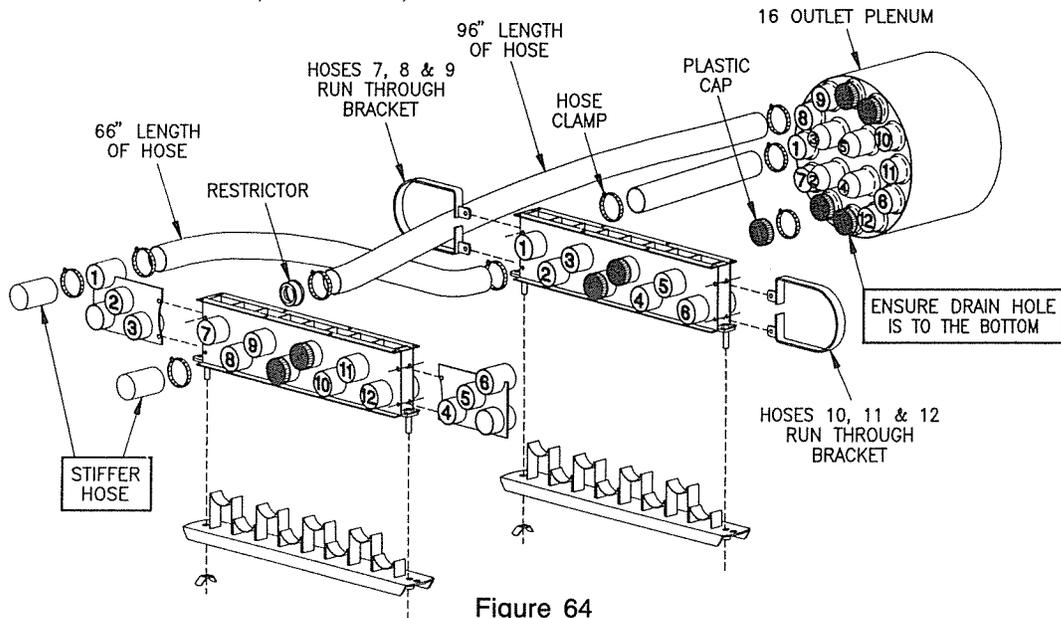


Figure 64

TOW BEHIND

61 - 70 RUN DISTRIBUTION (Model 6240 & 6300 Only)

The hoses should be cut to the required length and attached using the following pattern on the plenum (See Fig. 65). Any unused outlets must be sealed using the plastic caps and hose clamps provided.

Connect outlets 1 to 1 to 1, 2 to 2 to 2, etc.

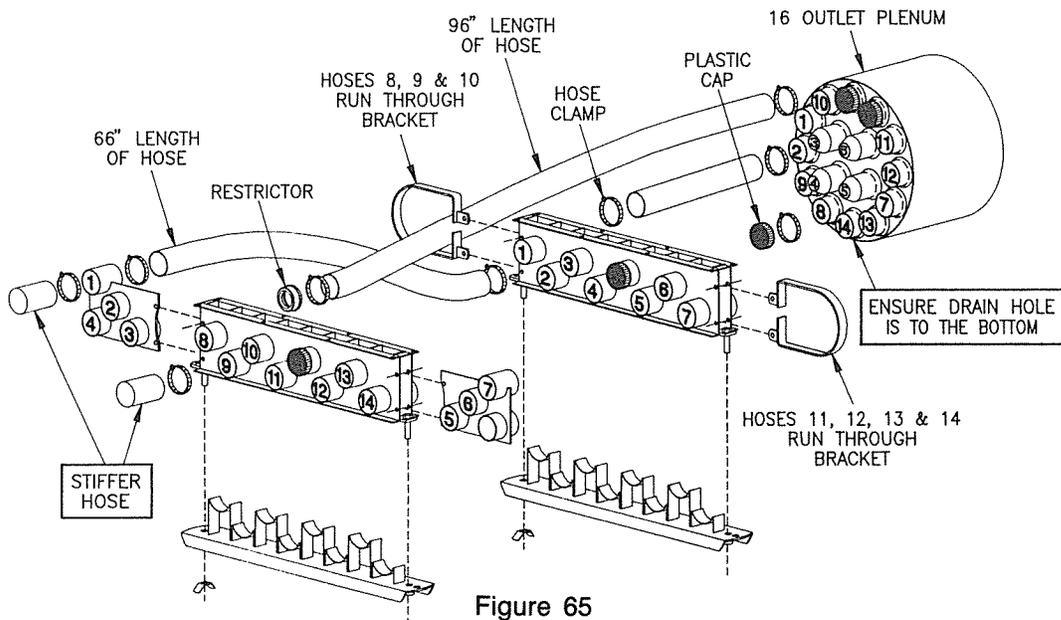


Figure 65

7.7.1 PRIMARY HOSE INSTALLATION (Continued)

TOW BEHIND

71 - 80 RUN DISTRIBUTION (Model 6240 & 6300 Only)

The hoses should be cut to the required length and attached using the following pattern on the plenum (See Fig. 66). All unused outlets must be sealed using the plastic caps and hose clamps.

Connect outlets 1 to 1 to 1, 2 to 2 to 2, etc.

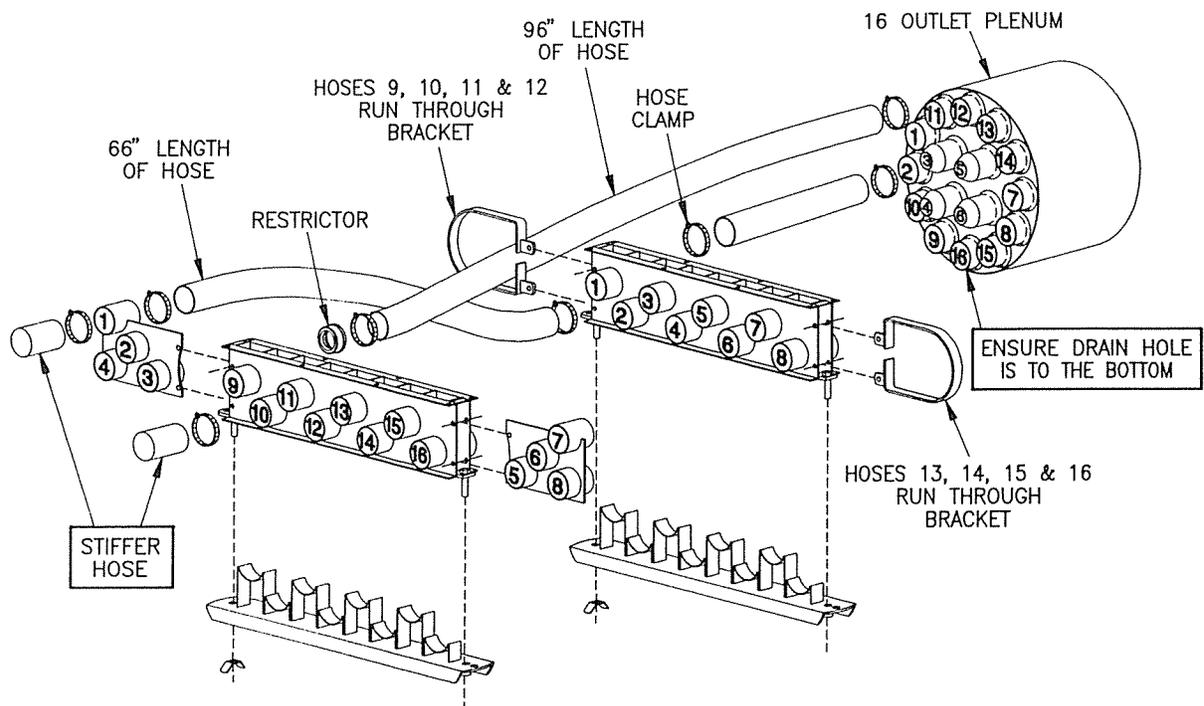


Figure 66

Setup

7.7.2 SECONDARY DIVIDER HEAD INSTALLATION (Continued)

Follow the guidelines as listed in Section 7.6.5 for general set up.

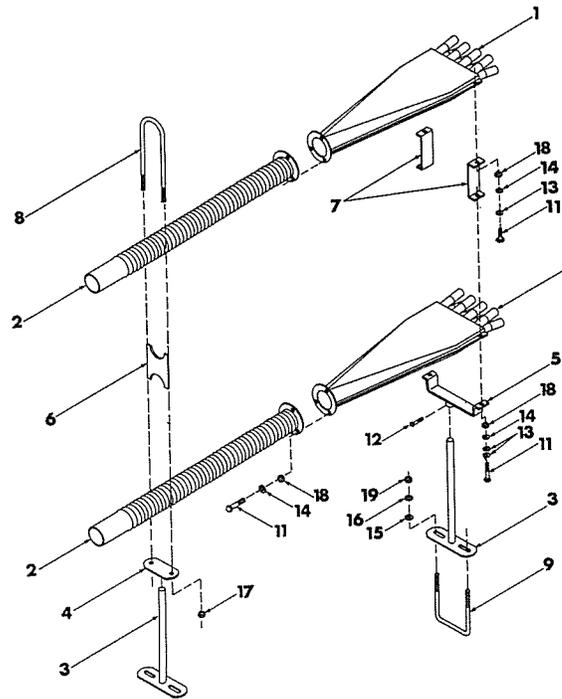


Figure 67

Depending on the Double Shoot set up it is usual to stack the Divider heads to conserve space and prevent interference with other cultivator parts. Illustrated in Fig. 49 is a typical set up for Double Shooting.

Use the schematics in Section 7.6.6 for Divider head locations.

For Double Shooting the heads will be stacked as shown in Fig. 49.

7.8 MONITOR AND CLUTCH SWITCH INSTALLATION

Mount Monitor and clutch switch in the cab of tractor. The units should be mounted where:

- The monitor LCD is visible.
- The clutch switch is within reach and easy to operate.
- 12 volt power source is readily accessible.

Route the power wires from both boxes to a 12 volt power source - i.e. battery or starter terminal.



IMPORTANT!: Some tractors have a 24 volt starting system. Neither the monitor nor the clutch will operate if they are connected to a 24 volt system. If in doubt, always connect to one battery only.

- Connect the red and white wires to the positive (+) terminal.
- Connect the black wires to a point on the tractor frame. Ensure good connections by cleaning the surrounding area thoroughly.
- Route the wiring harnesses to the rear of the tractor so that they are easily accessed for quick connection.
- Route harness away from moving parts, operator movement and sharp protrusions.
- Route extension harness along the L.H. hitch pole and across the cultivator frame following the hydraulic lines.

NOTE: Make sure extension wires will connect to their respective couplers i.e. male/female.



CAUTION!

Ensure harness extensions, when routed over the cultivator, are clear of moving parts and protruding objects that may cut wires.

- On 6180, 6240 & 6300 models **ONLY**. Set the airseeder constant. See Page 4.28 for the correct procedure.

8 Storage

8.1 GENERAL STORAGE

To ensure longer life and satisfactory operation, store the Air Seeder in a building.

If building storage is impossible, store away from areas of main activity.

- Clean machine thoroughly.
- Inspect all parts for wear or damage.
- Avoid delays - if parts are required, order at the end of the season.
- Lubricate grease fittings (refer to Lubricating Section).
- Tighten all bolts to proper specifications (refer to Bolt Torque Chart).
- To prevent corrosion and damage by rodents, clean the hopper boxes and metering systems thoroughly and wash with mild soapy water solution. Rinse with water and dry thoroughly. (See Section 8.2)
- A light coating of diesel fuel should be applied to all metal metering system components before storage.
- Avoid lubricant contact with grain and fertilizer tubes.
- Cover tires with canvas to protect them from the elements when stored outside.
- Loosen fan tension adjusting bolt. Only in engine drive.
- Relieve tension on tank lids.
- Loosen cleanout doors.
- Paint any surfaces that have become worn.
- Remove all chains and store in clean oil.
- Prior to a new season of use, it is recommended to spray the internal parts of the Metering body with WD-40 to loosen any buildup of corrosion.

MORRIS PAINT SPRAY CANS:

Part #	Description
W-4647	Red MORRIS Spray Can
W-4648	Blue MORRIS Spray Can
W-13762	White MORRIS Spray Can

LITRE CANS

Part #	Description
Z-10	Red Paint/Litre
Z-11	Blue Paint/Litre
Z-79	Clover White Paint/Litre

8.2 METERING BODY STORAGE



CAUTION! Care should be taken when working around the Air Seeder when the seeder fan is running. Product blowing out of system could cause personal injury.



CAUTION! Follow manufacturers recommended safety procedures when working with treated seed or fertilizers.

It is **EXTREMELY IMPORTANT** that the metering system is **THOROUGHLY CLEANED** before storing for any length of time. The following procedure should be followed for **BOTH** tanks:

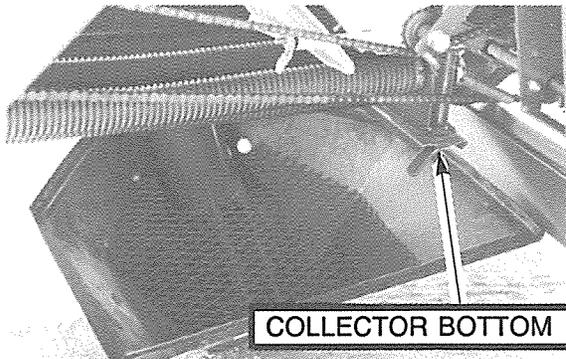
8.2 METERING BODY STORAGE (Continued)



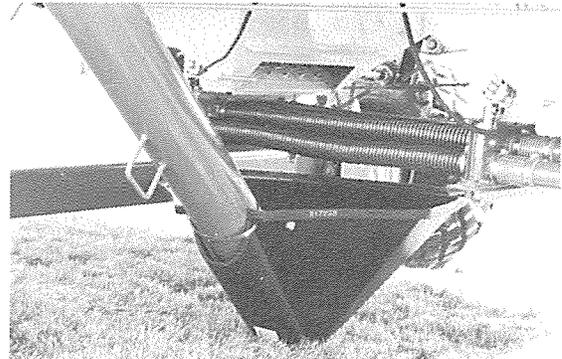
DANGER! KEEP ALL SHIELDS IN PLACE. KEEP HANDS, FEET AND CLOTHING AWAY FROM AUGER INTAKE, FAILURE TO DO SO WILL RESULT IN SERIOUS INJURY OR DEATH.

Emptying tanks is quick and easy to do.

1. Position auger under the tank to be emptied.
2. Start auger.
3. Loosen front cleanout door on metering body.
4. Regulate flow from the tank by loosening or tightening front cleanout door as required.
5. Once all material stops flowing, remove cleanout door completely and brush out remaining material in the corners.

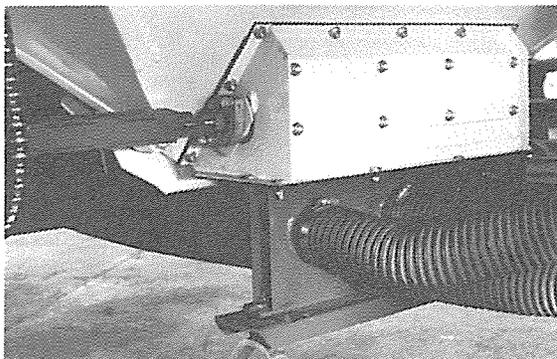
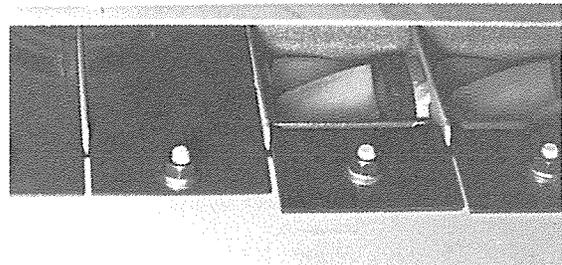


Front Cleanout Door

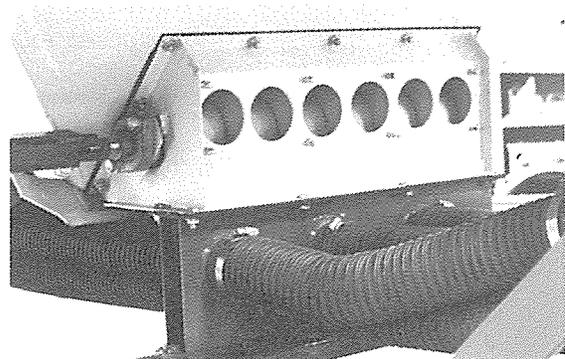


Front Cleanout Door Removed

6. Remove all sliders and Blank off Plates.
7. Remove the collector bottom.
8. Run fan.
9. Remove rear cleanout door and either blow or wash out any remaining material in the openings.



Rear Cleanout Door



Rear Cleanout Door Removed

Storage

8.2 METERING BODY STORAGE (Continued)

10. Wash the interior of both tanks and metering system with SOAPY water. Wash the collector.
11. Rinse with cold water and let the unit air dry.
12. Coat metal parts with Diesel fuel.

NOTE: Diesel fuel will not harm metering wheels.

13. Re-install all sliders and blank off plates in the same order they were removed.
14. Replace the cleanout door and the bottom of the collector.
15. Start the fan and operate for **5 MINUTES**. This will dry out any remaining moisture that could be in the system.
16. Leave cleanout doors loose. (This will help to prevent condensation building up inside the tank) and leave lid latches loose to help maintain resilience of the seals.

8.3 ENGINE STORAGE

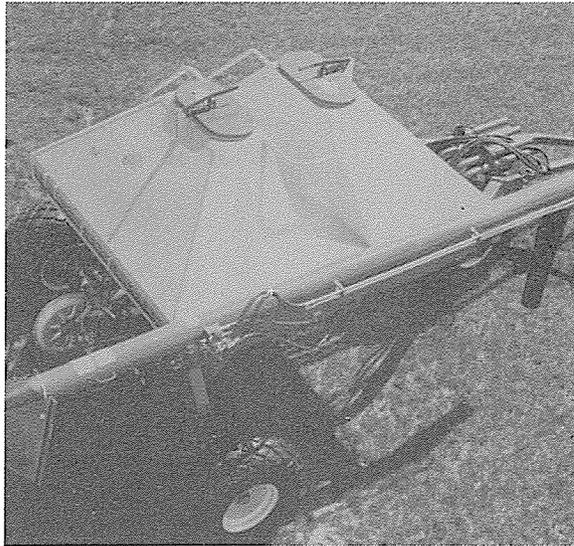
To prolong life, it is recommended that the following be done when the unit is stored for any long period of time.

- Warm up engine and change oil and filter.
- Drain Fuel tank and fuel system.
- Remove spark plugs. Add 1/2 fluid ounce of engine oil into each cylinder. Install spark plugs but not the plug leads. Crank engine two or three revolutions.
- Clean exterior of engine. Coat exposed metal with or light film of oil to prevent rusting.
- Cover engine to protect it from the elements.

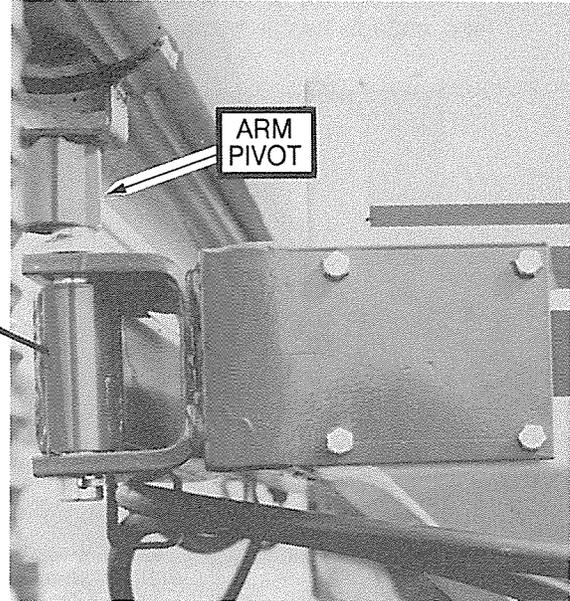
9 Options

9.1 HYDRAULIC LOADING UNLOADING AUGER OPERATION

The optional Hydraulic Auger is designed to make loading and unloading product from the airseeder tank very simple and easy.



Top view of Air Seeder



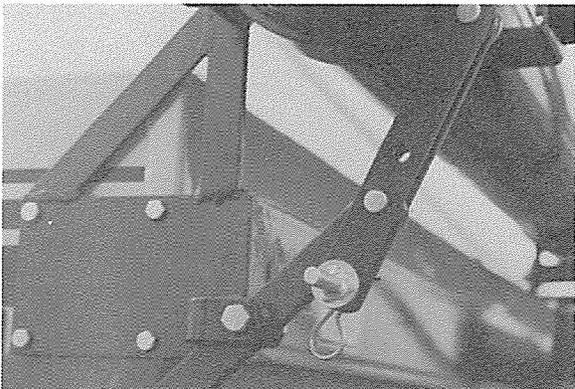
Auger Mount



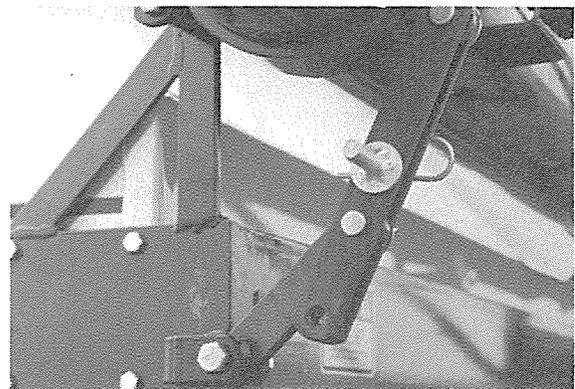
DANGER! KEEP ALL SHIELDS IN PLACE. KEEP HANDS, FEET AND CLOTHING AWAY FROM AUGER INTAKE, FAILURE TO DO SO WILL RESULT IN SERIOUS INJURY OR DEATH.

LOADING

1. Unlatch the auger from its transport position.
2. Swing out the auger making sure the motor end of the auger is still engaged at the arm pivot. (See above)
3. Once the auger pivot is central to the airseeder, tilt auger and swing into position with spout centrally located over the walkway.
4. Open lids on tank and insert spout.



Auger Locked

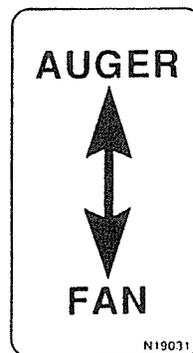
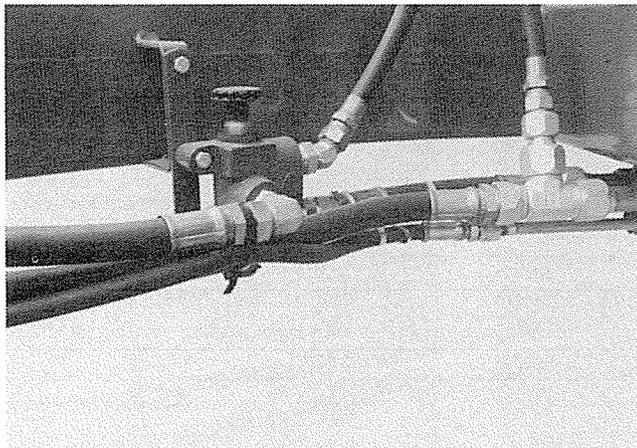


Auger Unlocked

Options

9.1 HYDRAULIC LOADING UNLOADING AUGER OPERATION (Continued)

5. Back up truck to the hopper and engage the hydraulic motor on the auger.
 - (a) If Hydraulic fan drive then ensure selector valve is in correct position for auger operation and engage tractor hydraulics.



Selector Valve

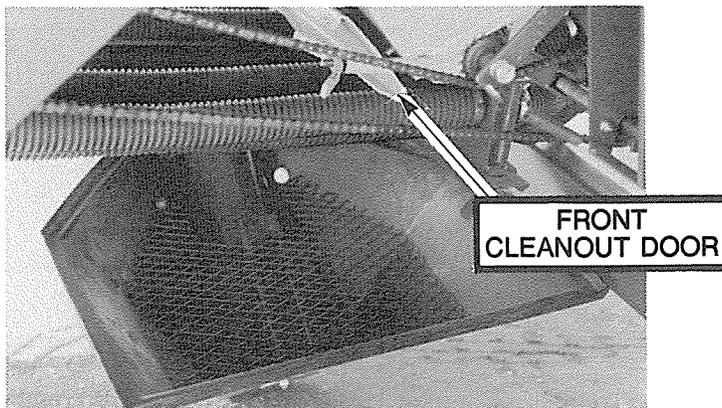
- (b) If Engine Fan drive then engage tractor hydraulics to operate auger. The auger also has a **REVERSE FEATURE** for cleaning out the hopper. Once loading is finished reverse the above procedure and **LOCK** auger in transport position.



DANGER! KEEP ALL SHIELDS IN PLACE. KEEP HANDS, FEET AND CLOTHING AWAY FROM AUGER INTAKE, FAILURE TO DO SO WILL RESULT IN SERIOUS INJURY OR DEATH.

UNLOADING

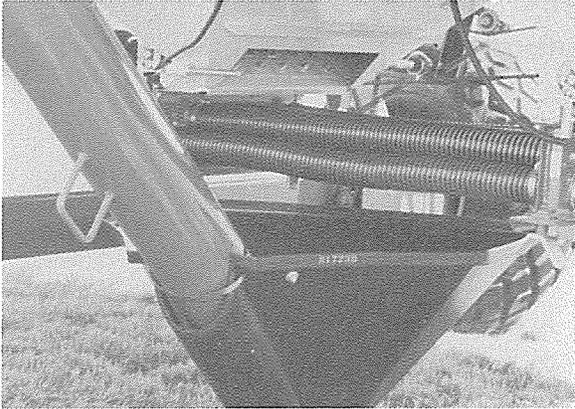
5. Repeat steps 1 and 2.
6. Swing auger under either the front or rear tank for cleanout.
7. Start auger and loosen cleanout door.
8. Regulate flow from the air seeder as required by loosening or tightening cleanout door.



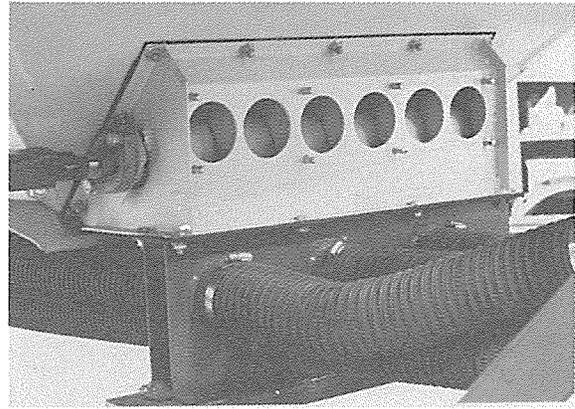
Hopper Bottom Positioned for Unloading

9.1 AUGER OPERATIONS (Continued)

9. Once all material stops flowing, remove cleanout door completely and brush out remaining material in the corners.

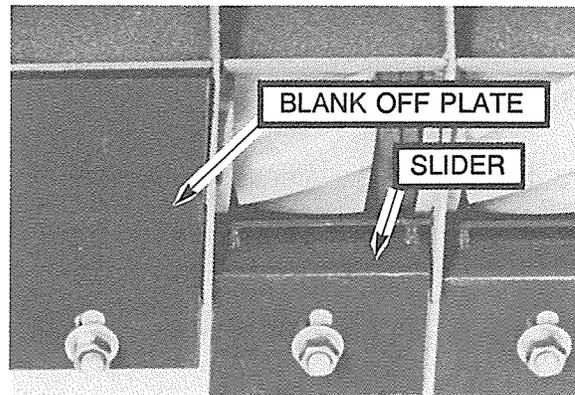


Front Cleanout Door Removed



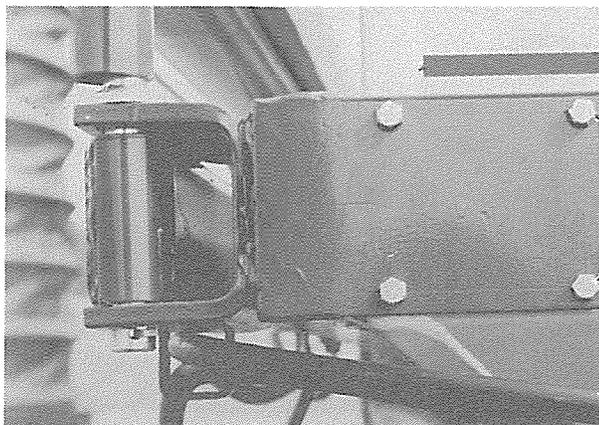
Rear Cleanout Door Removed

10. For complete cleanout:
 - (a) Remove all sliders and blank off plates.
 - (b) Remove the collector doors.
 - (c) Run fan with doors off.
 - (d) Remove rear cleanout door and either blow or wash out any remaining material in the openings.
 - (e) Replace sliders, blank off plates and cleanout doors.



9.2 AUGER SET-UP

1. Install the Auger Mount to the R.H.S. of the Airseeder using 3/8" x 1" lg. bolts, flatwashers and nuts. The 1/8" thick flat washer must be inserted between the outside of the tank and the auger mount. Ensure that the Auger arm pivot bracket is to the front of the Airseeder. (See Below).

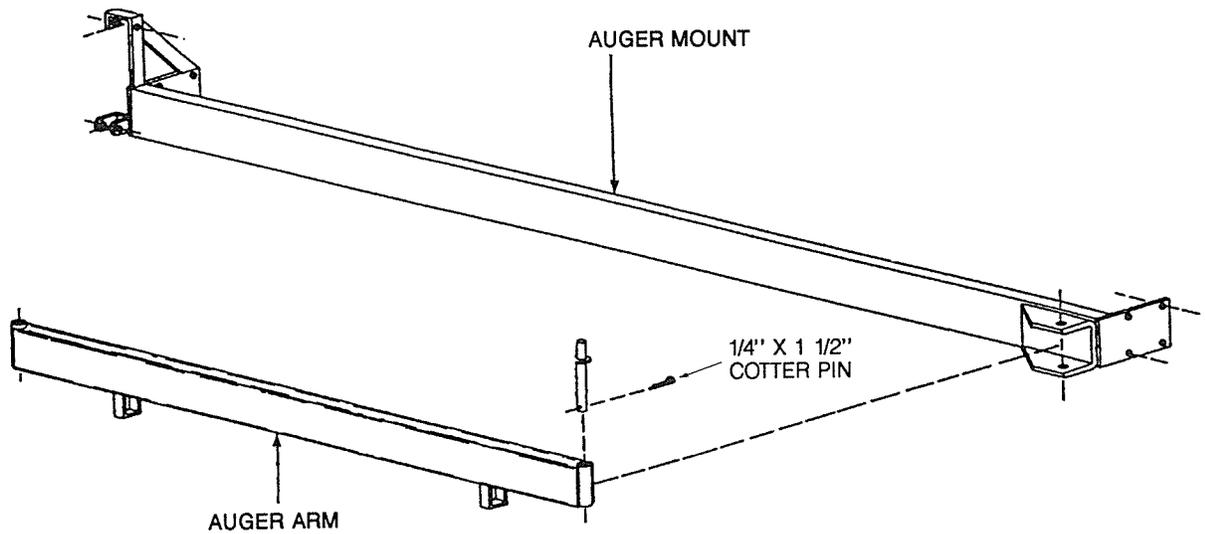


1/8" THICK FLAT
WASHER BETWEEN
TANK AND MOUNT

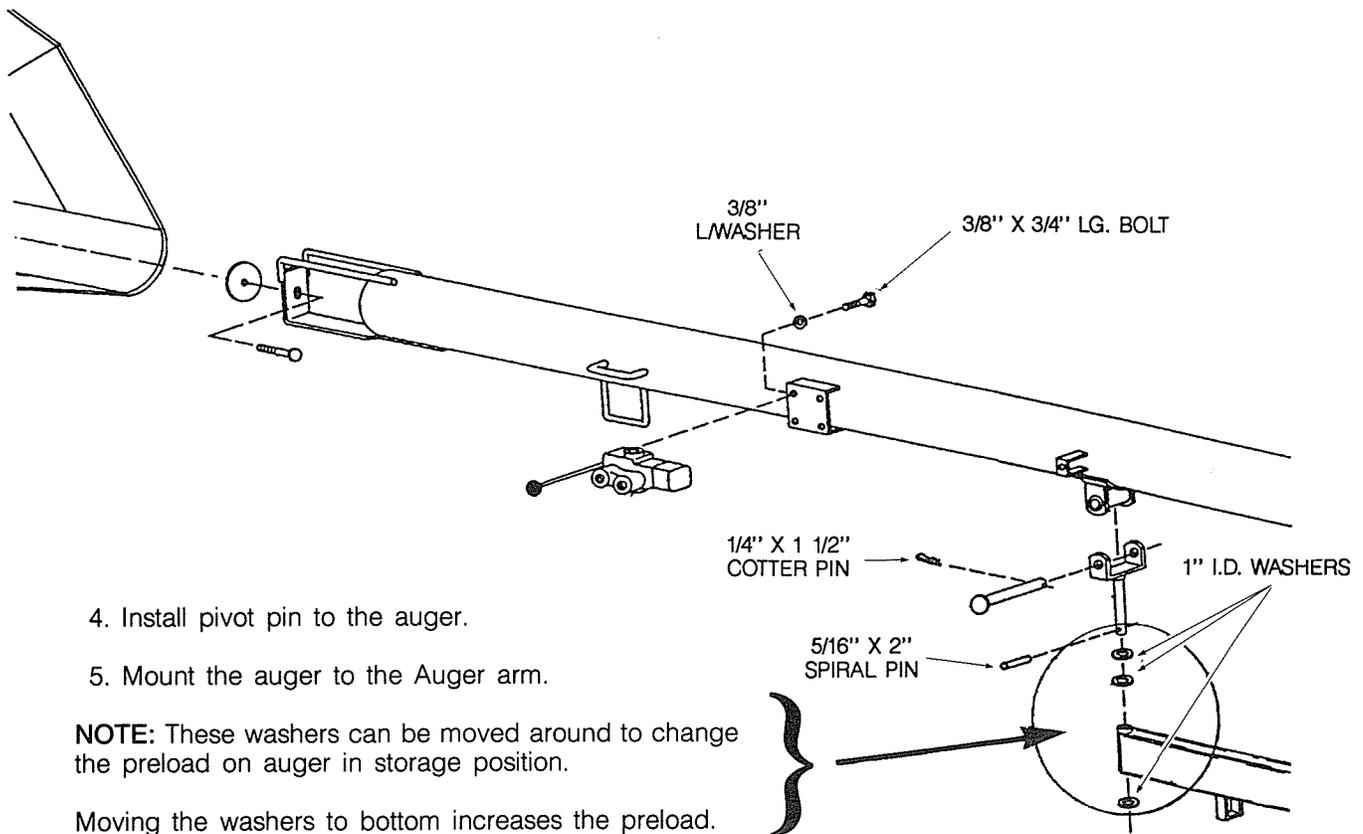
Options

9.2 AUGER SET-UP (Continued)

2. Silicone around nuts on the inside of the tank, to prevent air leakage.



3. Mount the Auger Arm to the Auger mount.



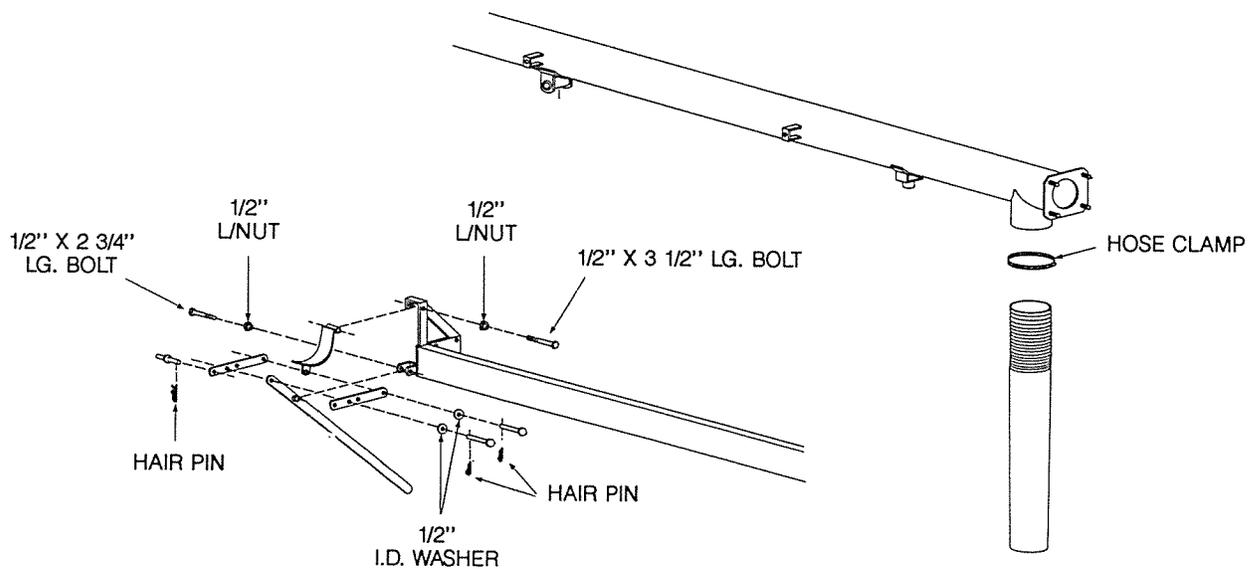
4. Install pivot pin to the auger.

5. Mount the auger to the Auger arm.

NOTE: These washers can be moved around to change the preload on auger in storage position.

Moving the washers to bottom increases the preload.

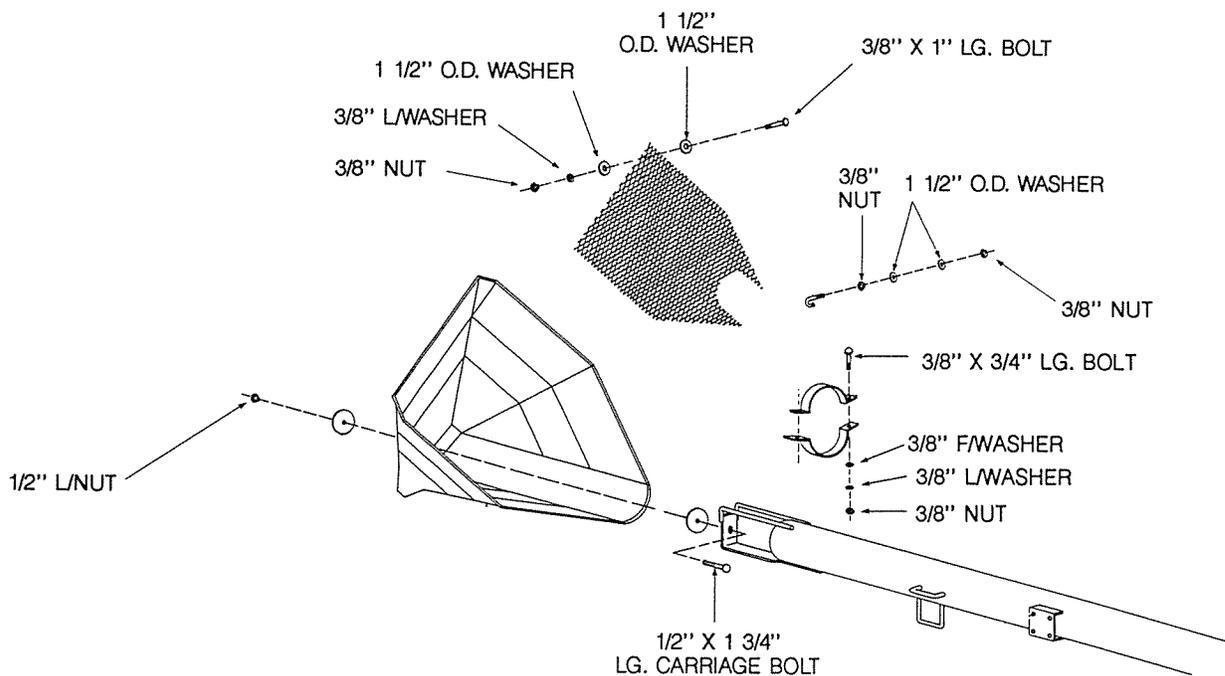
9.2 AUGER SET-UP (Continued)



7. Install the spout using a hose clamp.

8. Install the auger saddle using 1/2" x 3 1/2" LG bolts.

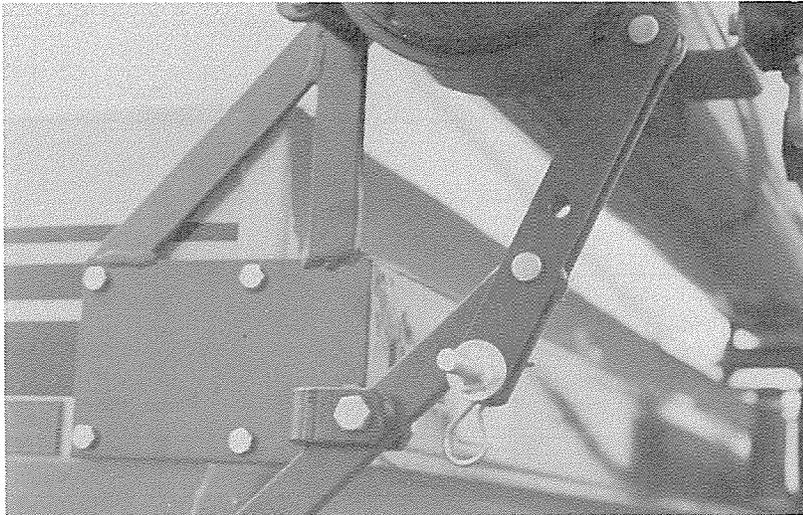
NOTE: Tighten bolt and clamp so hopper does not flop around but loose enough so that hopper rotates easily.



9. Install the hopper bottom and the hopper screen.

Options

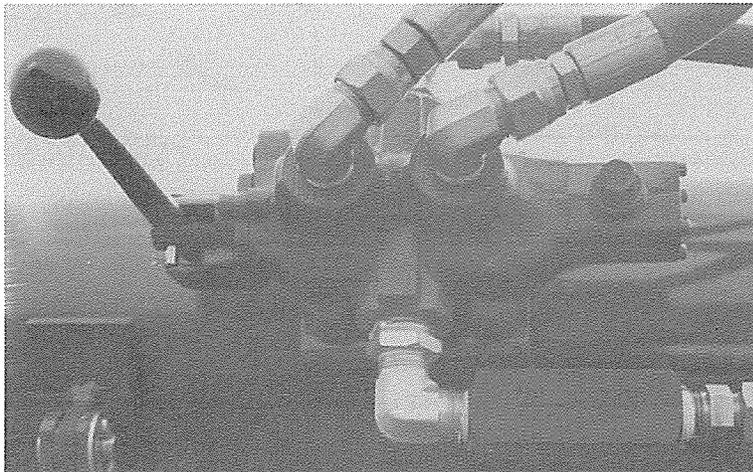
9.2 AUGER SET-UP (Continued)



Auger Locked

10. Install the transport lock.
11. Mount the hydraulic valve to the Auger using 3/8" x 3/4" LG bolts.
12. Install hydraulic fittings into the hydraulic valve with the arrow pointing in the direction as shown.
13. Install the check valve to the hydraulic valve with the arrow pointing in the direction as shown.

NOTE: It must be installed on the **OUT PORT** of the valve for correct operation of the pressure relief valve in the valve block.



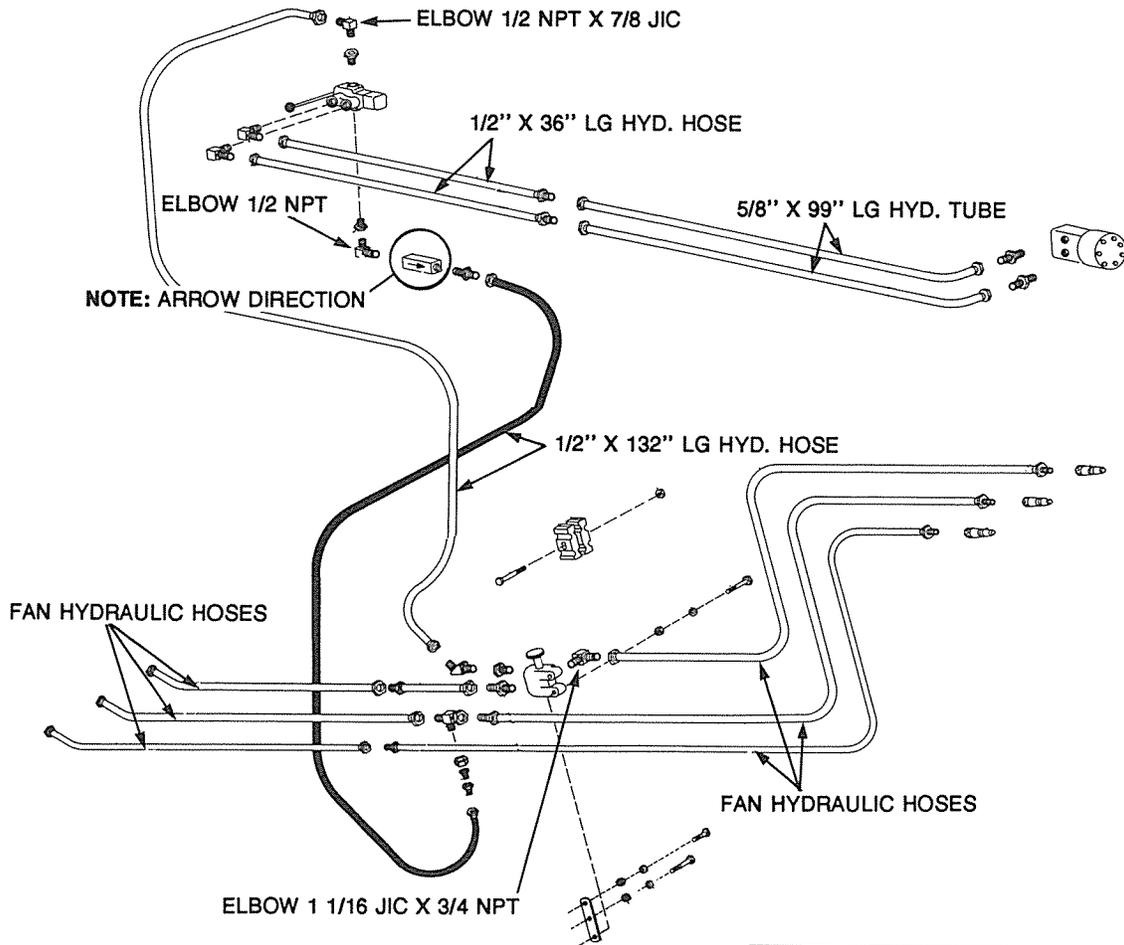
Direction of Arrow →
Hydraulic Valve With Check Valve Installed

15. Route hoses through the loops on the auger arm.
16. If the fan is driven hydraulically then hook up the selector valve as shown on page 9.16.

This allows the fan hydraulic lines to be used for auger operation.

9.2 AUGER SET-UP (Continued)

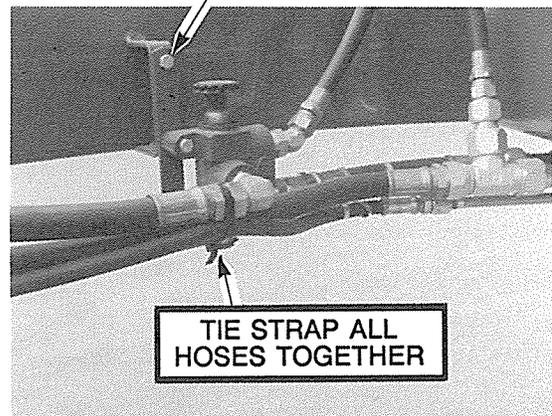
Hydraulic hose routing for hydraulic fan drive.



BOLT MUST BE INSTALLED THIS WAY



Hose Routing



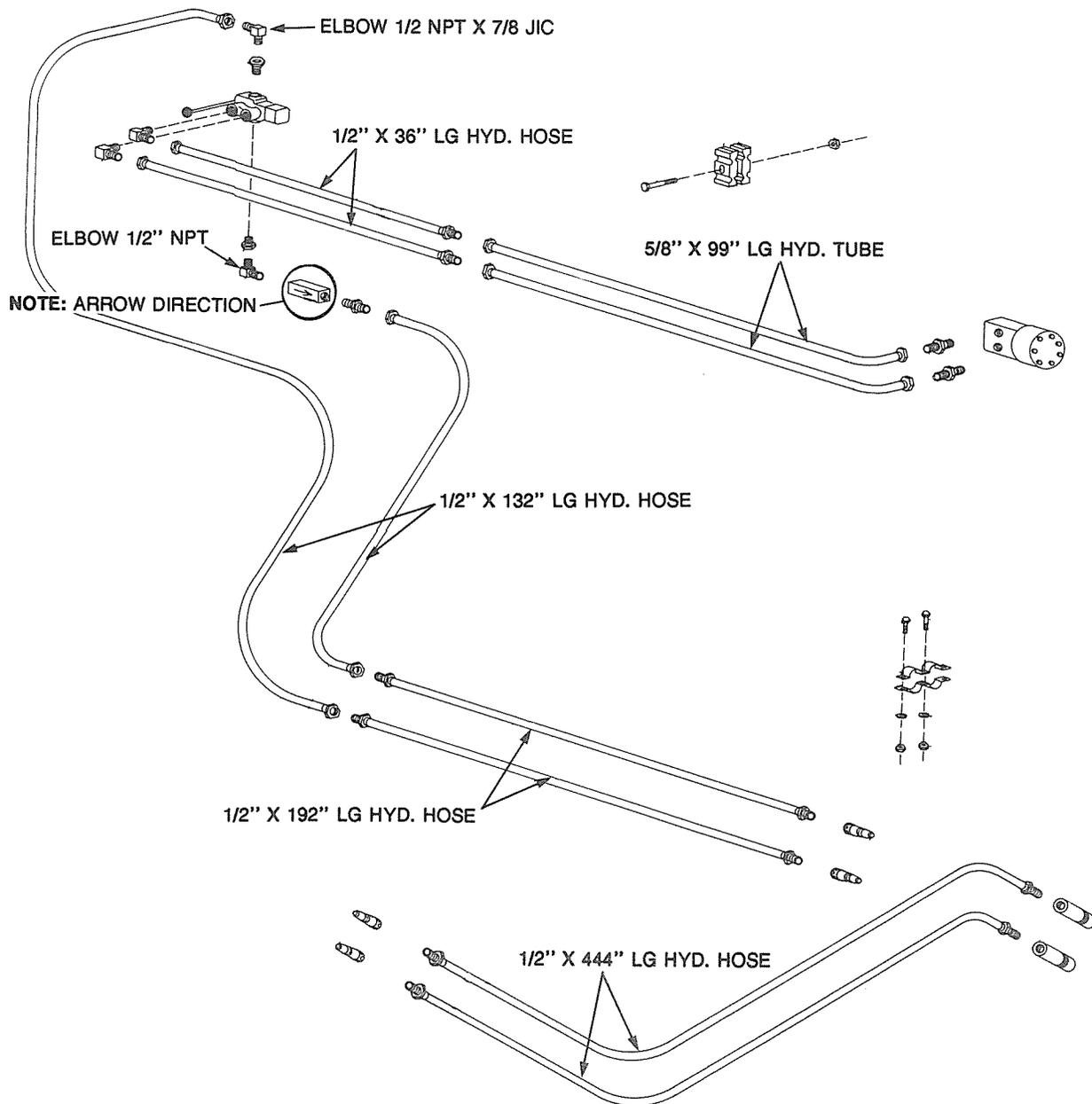
TIE STRAP ALL HOSES TOGETHER

Selector Valve

Options

9.2 AUGER SET-UP (Continued)

17. If the fan is driven by a gas engine then hook up the hydraulics as shown below.
18. Route the shorter hoses through the loops on the auger arm and down the L.H. hitch pole of the airseeder.
19. Mount the Quick Couplers on the L.H.S. hitch bracket on the rear of the cultivator.
20. Install the longer hoses 36 ft. along the L.H.S. hitch pole of the cultivator to the tractor.



9.3 SECOND CLUTCH

OPERATION

The second clutch is mounted to the rear tank metering shaft.

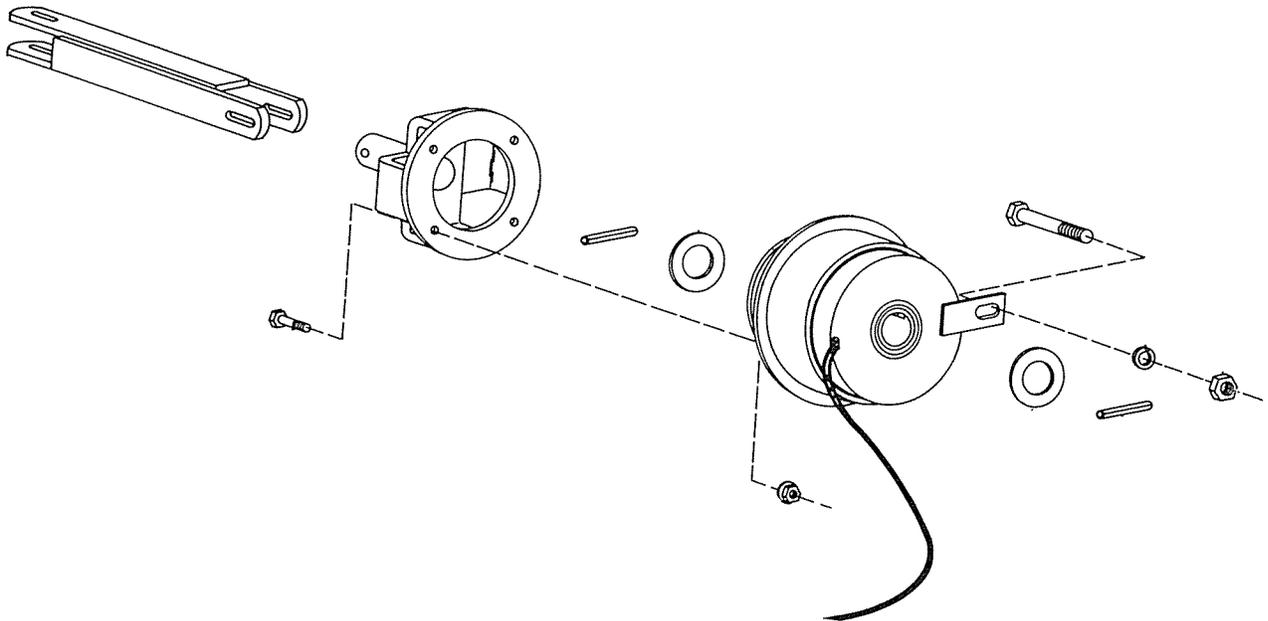
This enables the operator to stop or start the rear metering while the front metering continues. This is especially useful for spot fertilizing.

The clutch is electric operated and is switched from inside the tractor cab.

NOTE: The primary clutch still controls the front shaft and back shaft with or without the secondary clutch.

SET-UP

1. Remove the metering shaft coupler from the rear metering shaft.
2. Mount Coupler to the clutch using 1/4" x 3/4" LG. bolts.
3. Install the clutch and coupler to the transmission output shaft using 1/4" x 1 1/2" LG spiral pins on either side of the clutch.

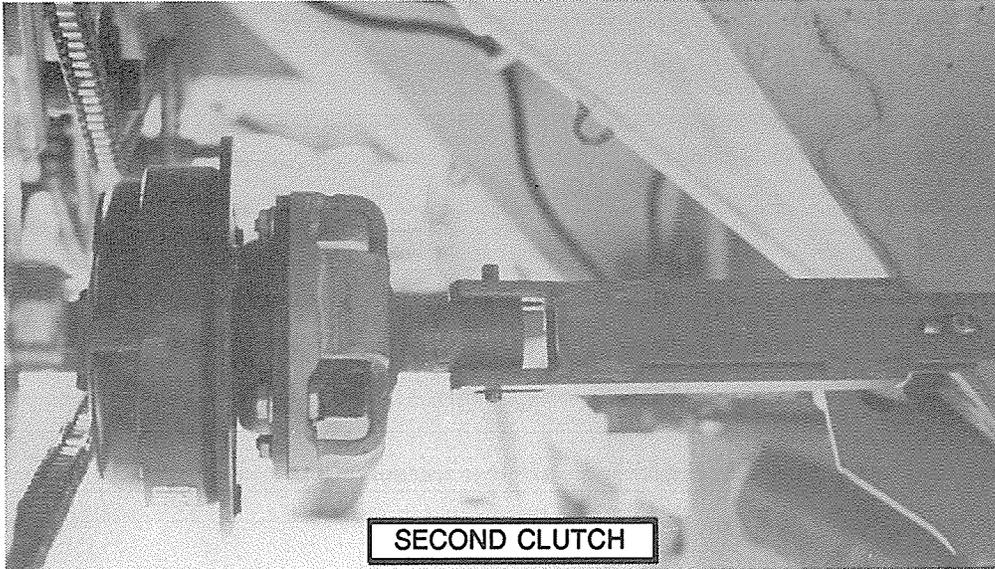


Second Clutch Set-up

4. Install the short metering shaft coupler.
5. Install the 3/8" x 4" LG. bolt into the hole in the rear transmission plate.
6. Run the cable down the L.H. Airseeder Hitch Pole.

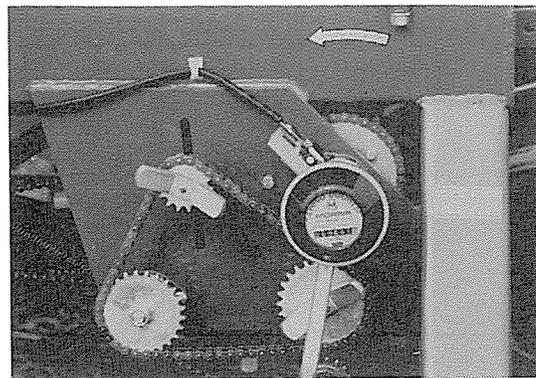
Options

9.3 SECOND CLUTCH (Continued)



7. Run the extension cable along the L.H. Pole of the Cultivator.
8. Hook up switch in the cab. Connect wires to the battery. The white wire is power and the black is ground.
9. Route the cable so that it is free from pinch points and cannot be snagged or hooked.
10. Route Harness from the switch to the rear of the tractor so that it can quick couple to the harness routed over the cultivator.
11. Mark the Brylite Plugs and switch boxes indicating which switch operates which clutch.

9.4 ACRE TALLY



Install tamper proof acre tally to the crank handle shaft. To convert the Acre Tally Reading (R) into the actual acres seeded turn to page 4.15 to get the Acre Tally Factor (F) for the Airseeder/cultivator width being used. Take the Acre Tally Reading (R) and multiply it by the Acre Tally Factor (F) to get the Actual Acres Seeded.

$$R \times F = \text{Actual Acres Seeded}$$

Example: A 6180 with a 41 ft. cultivator has an Acre Tally Reading (R) of 100. The Acre Tally Factor (F) on page 4.15 is 3.71.

$$\begin{aligned} R \times F &= \text{Actual Acres Seeded} \\ 100 \times 3.71 &= 371 \text{ Acres} \end{aligned}$$

9.5 FERTILIZER BANDING KIT

Operation

The fertilizer Banding Kit joins the two transmissions together, so only the front transmission needs to be set for different rates.

The product is then metered at the same rate out of each tank.



CARE MUST BE TAKEN WHEN ADJUSTING AND CHECKING METERING RATES.

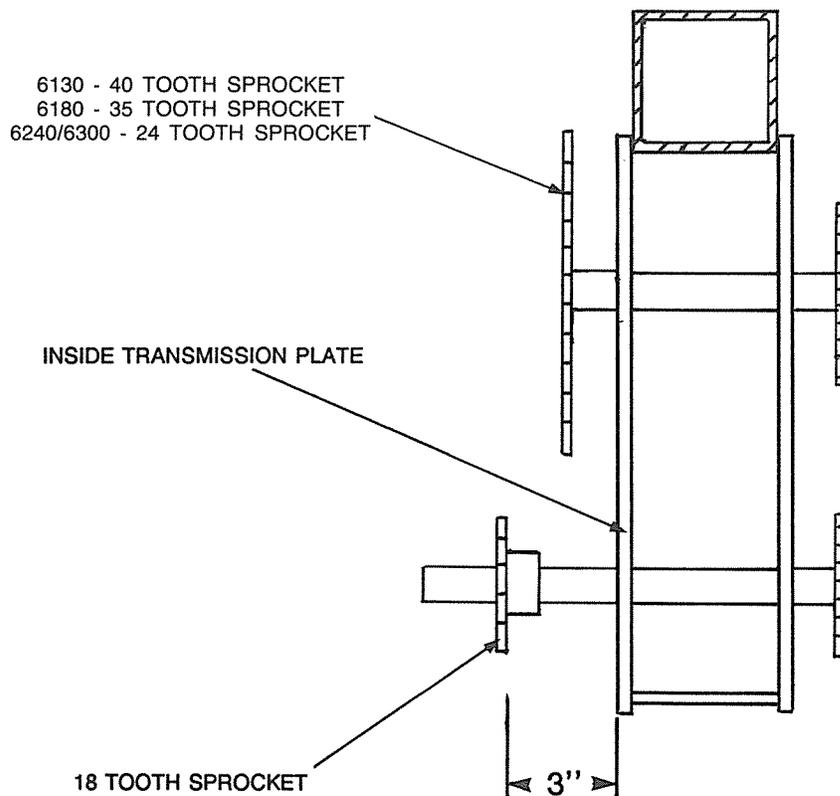
The amount collected from one tank is **half** the **total** amount being metered into the Airstream.

Remove the chain joining the two transmissions when taking samples.

This will prevent the material from being deposited into the front collector body that is **not** being checked and so help prevent any possible plugging of the hoses.

Set-Up

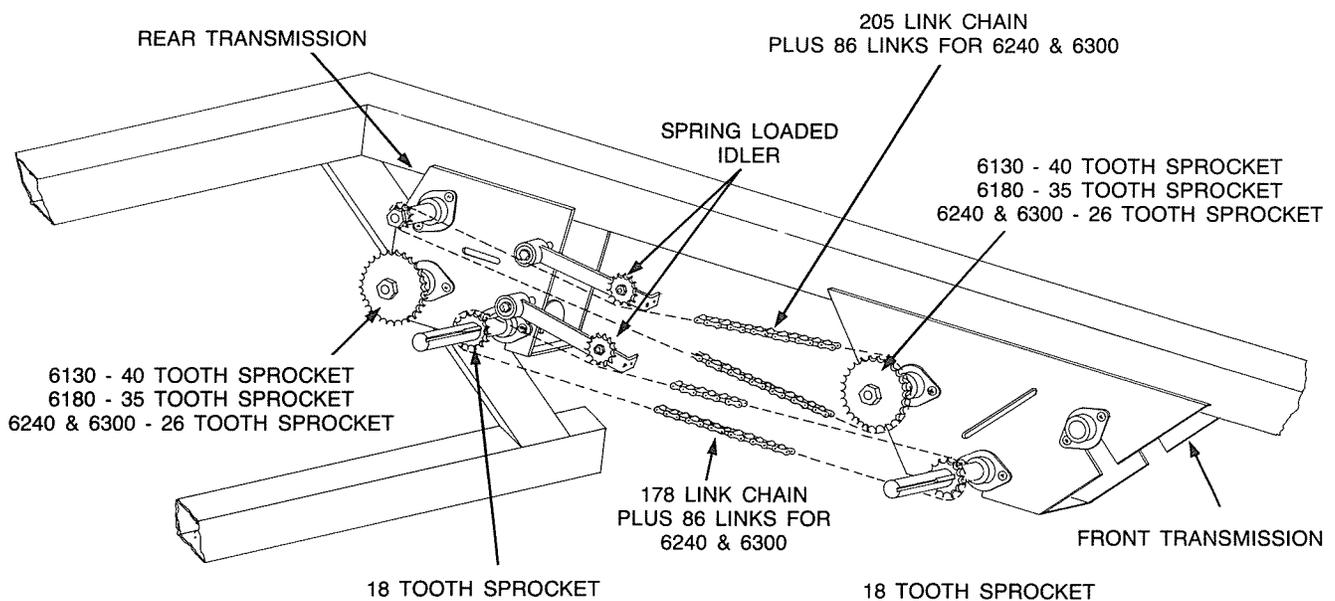
1. Remove and store the long chain joining the two 40 tooth sprockets on the backside of the transmissions.
2. Remove the shaft couplers from both metering shafts.
3. Install the 18 tooth sprockets onto the meter drive shaft on each transmission. Place each sprocket so it is 3" away from the transmission plate. See below:



Options

9.5 FERTILIZER BANDING KIT (Continued)

4. Attach the second Spring loaded idler to the Rear Transmission and align the idler and the two 18 tooth sprockets mounted to the metershafts. See below:

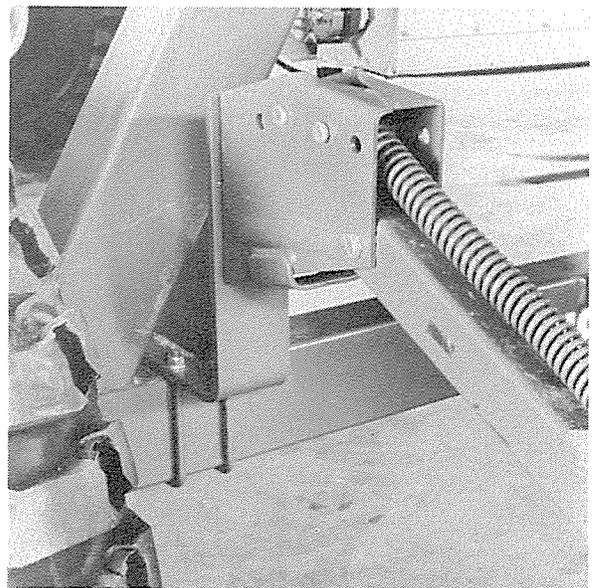
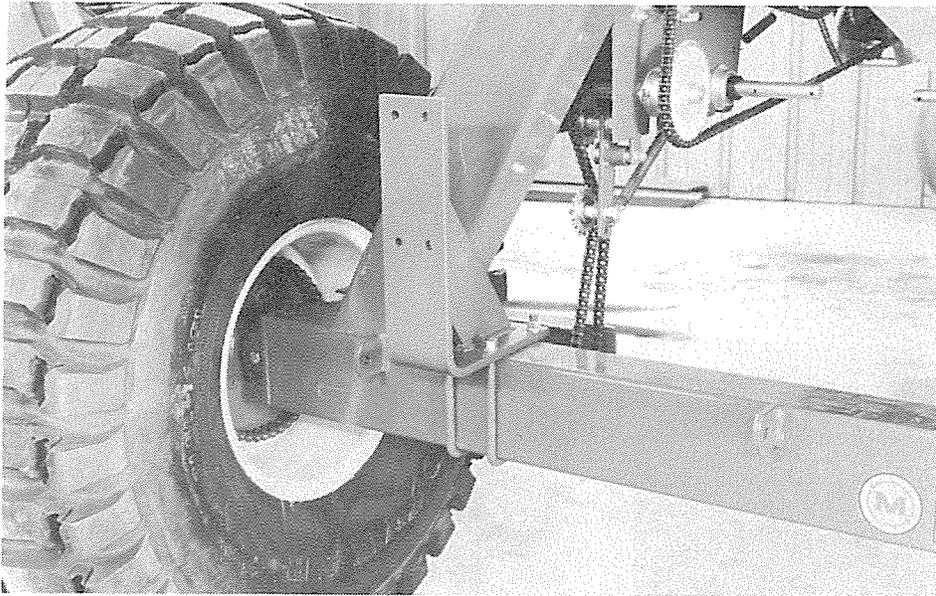


5. Install the 205 link and 178 link chains as shown on the 6130 & 6180. On the 6240 & 6300, add an additional 86 links to the 178 link chain and 86 links to the 205 link chain.
6. Tighten the chains using the spring loaded idlers.

9.6 MOUNTED HARROW KIT

Set-Up

1. Mount Harrow Bracket as shown with two - 1/2" U-bolts, lockwashers and nuts.
2. Attach Harrow Arm to Brack with four - 1/2" x 1 3/4" bolts, lockwashers and nuts.
3. Mount Harrow to Harrow Arm.



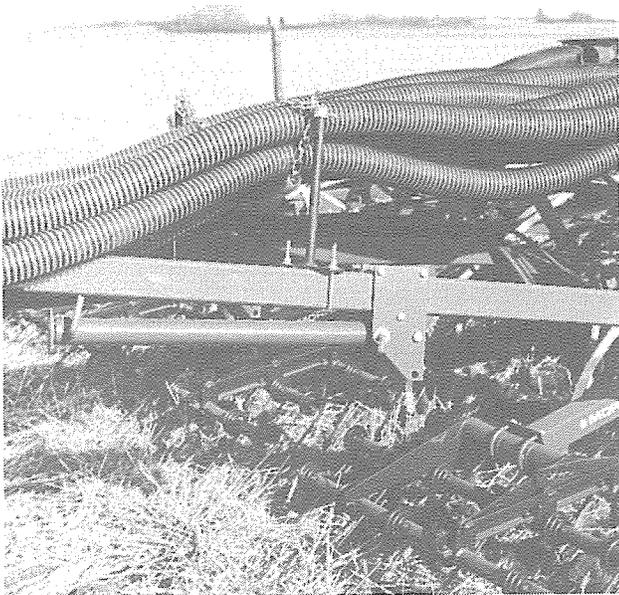
Options

9.7 HITCH STAND KIT

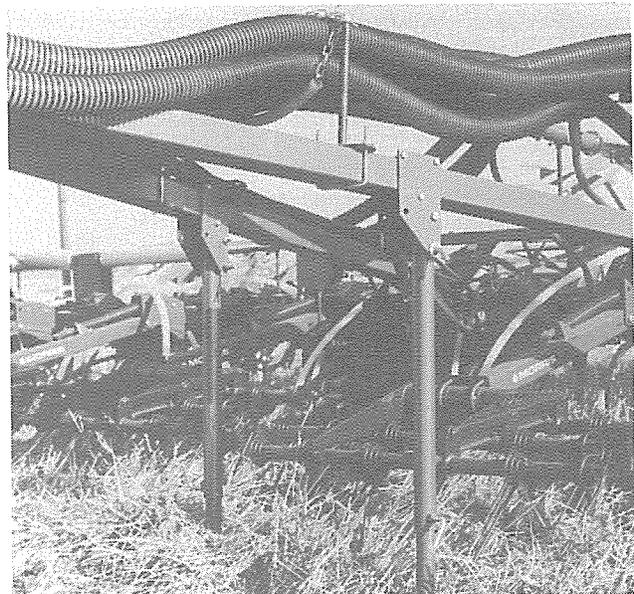
1. Attach the Mounting Plates to the hitch pole using three - 3/8" x 4" bolts, lockwashers and nuts.

NOTE: Locate hitch stands in a position which will clear any attachments on cultivator. (i.e., Mount Harrows, Packers, etc.).

2. Mount the Outer tube between mounting plates with a 1/2" x 4 1/2" bolt, lockwasher and nut.
3. Slide Inner Tube into outer tube retaining with the tightener.
4. Retain Stand with a 5/8" Pin and Hair Pin.



Transport Position



Attach/Detach Position

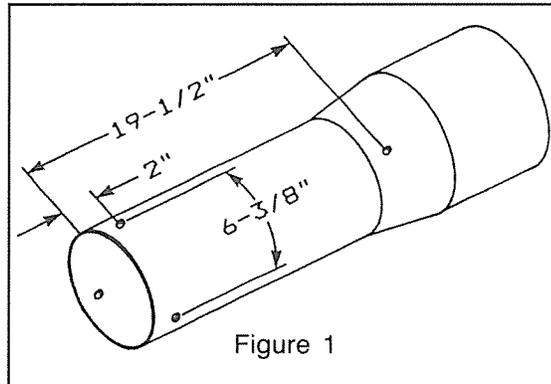


Airseeder Detached From Cultivator

9.8 AUGER SPOUT EXTENSION KIT #N23188

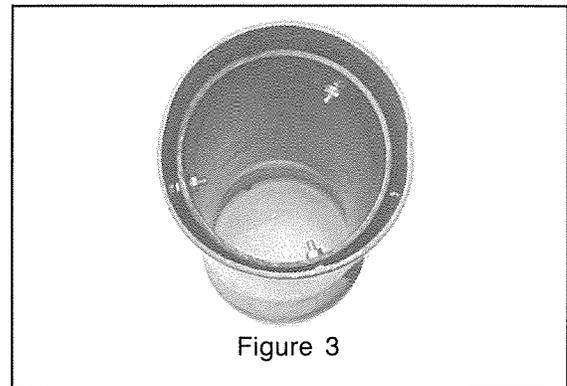
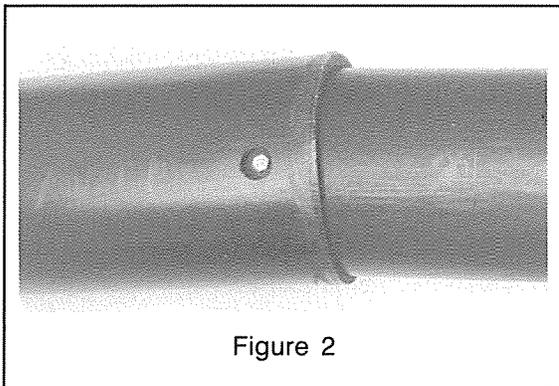
Set-Up

- Remove existing spout from the auger.
- Drill three 1/4" dia. holes 2" from edge of spout and approximately 6 3/8" apart. See Figure 1.
- Drill a 1/4" dia. hole 19 1/2" from edge of spout. See Figure 1.

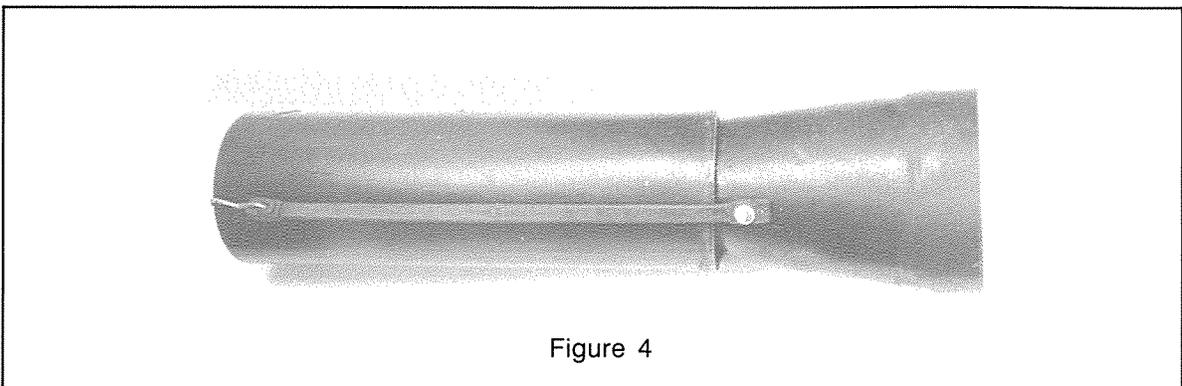


- Slide extension onto the spout and install three 1/4" x 3/4" bolts with 1/4" locknuts through the hole in the extension. See Figure 2 & Figure 3.

NOTE: Flatwashers may be required to shim the Bolt Heads in order to get the desired fit.



- Attach the tarp strap to the spout with a 1/4" x 1 1/4" bolt, flatwasher and locknut. See Figure 4.
- Install spout assembly onto the auger.



6000 SERIES AIR SEEDER METRIC RATE CALIBRATION

Calibration Chart based on 1/10 of a Hectare.

W = Machine Width (Meters)

F = Optional Mechanical Acre Tally
Factor = 56/R

R = Crank Rotation - turns

for 1/10 Hectare = 529.3/W for 6130

for 1/10 Hectare = 466.6/W for 6180

for 1/10 Hectare = 349.9/W for 6240

for 1/10 Hectare = 318.1/W for 6240 & 6300 with Rice Tires.

D = Distance required for 1/10 Hectare (Meter) = 1000/W

6000 Series Air Seeder METRIC RATE CALIBRATION CHART																					
WIDTH		AIRSEEDER MODEL								DISTANCE	WIDTH		AIRSEEDER MODEL								DISTANCE
(ft)	[W] (m)	6130		6180		6240		6240/6300		[D] (m)	(ft)	[W] (m)	6130		6180		6240		6240/6300		[D] (m)
		[R]	[F]	[R]	[F]	[R]	[F]	[R] Rice	[F] Rice				[R]	[F]	[R]	[F]	[R]	[F]	[R] Rice	[F] Rice	
21	6.40	82.70	0.68	72.91	0.77	54.67	1.02	49.70	1.13	156.25	51	15.54	34.06	1.64	30.03	1.86	22.52	2.49	20.47	2.74	64.35
22	6.71	78.88	0.71	69.54	0.81	52.15	1.07	47.41	1.18	149.03	52	15.85	33.39	1.68	29.44	1.90	22.08	2.54	20.07	2.79	63.09
23	7.01	75.51	0.74	66.56	0.84	49.91	1.12	45.38	1.23	142.65	53	16.15	32.77	1.71	28.89	1.94	21.67	2.58	19.70	2.84	61.92
24	7.32	72.31	0.77	63.74	0.88	47.80	1.17	43.46	1.29	136.61	54	16.46	32.16	1.74	28.35	1.98	21.26	2.63	19.33	2.90	60.75
25	7.62	69.46	0.81	61.23	0.91	45.92	1.22	41.75	1.34	131.23	55	16.76	31.58	1.77	27.84	2.01	20.88	2.68	18.98	2.95	59.67
26	7.92	66.83	0.84	58.91	0.95	44.18	1.27	40.16	1.39	126.26	56	17.07	31.01	1.81	27.33	2.05	20.50	2.73	18.64	3.00	58.58
27	8.23	64.31	0.87	56.70	0.99	42.52	1.32	38.65	1.45	121.51	57	17.37	30.47	1.84	26.86	2.08	20.14	2.78	18.31	3.06	57.57
28	8.53	62.05	0.90	54.70	1.02	41.02	1.37	37.29	1.50	117.23	58	17.68	29.94	1.87	26.39	2.12	19.79	2.83	17.99	3.11	56.56
29	8.84	59.88	0.94	52.78	1.06	39.58	1.41	35.98	1.56	113.12	59	17.98	29.44	1.90	25.95	2.16	19.46	2.88	17.69	3.17	55.62
30	9.14	57.91	0.97	51.05	1.10	38.28	1.46	34.80	1.61	109.41	60	18.29	28.94	1.94	25.51	2.20	19.13	2.93	17.39	3.22	54.67
31	9.45	56.01	1.00	49.38	1.13	37.03	1.51	33.66	1.66	105.82	61	18.59			25.10	2.23	18.82	2.98	17.11	3.27	53.79
32	9.75	54.29	1.03	47.86	1.17	35.89	1.56	32.63	1.72	102.56	62	18.90			24.69	2.27	18.51	3.03	16.83	3.33	52.91
33	10.06	52.61	1.06	46.38	1.21	34.78	1.61	31.62	1.77	99.40	63	19.20			24.30	2.30	18.22	3.07	16.57	3.38	52.08
34	10.36	51.09	1.10	45.04	1.24	33.77	1.66	30.70	1.82	96.53	64	19.51			23.92	2.34	17.93	3.12	16.30	3.44	51.26
35	10.67	49.61	1.13	43.73	1.28	32.79	1.71	29.81	1.88	93.72	65	19.81			23.55	2.38	17.66	3.17	16.06	3.49	50.48
36	10.97	48.25	1.16	42.53	1.32	31.90	1.76	29.00	1.93	91.16	66	20.12			23.19	2.41	17.39	3.22	15.81	3.54	49.70
37	11.28	46.92	1.19	41.37	1.35	31.02	1.81	28.20	1.99	88.65	67	20.42			22.85	2.45	17.14	3.27	15.58	3.59	48.97
38	11.58	45.71	1.23	40.29	1.39	30.22	1.85	27.47	2.04	86.36	68	20.73			22.51	2.49	16.88	3.32	15.34	3.65	48.24
39	11.89	44.52	1.26	39.24	1.43	29.43	1.90	26.75	2.09	84.10	69	21.03			22.19	2.52	16.64	3.37	15.13	3.70	47.55
40	12.19	43.42	1.29	38.28	1.46	28.70	1.95	26.10	2.15	82.03	70	21.34			21.87	2.56	16.40	3.41	14.91	3.76	46.86
41	12.50	42.34	1.32	37.33	1.50	27.99	2.00	25.45	2.20	80.00	71	21.64			21.56	2.60	16.17	3.46	14.70	3.81	46.21
42	12.80	41.35	1.35	36.45	1.54	27.34	2.05	24.85	2.25	78.13	72	21.95			21.26	2.63	15.94	3.51	14.49	3.86	45.56
43	13.11	40.37	1.39	35.59	1.57	26.69	2.10	24.26	2.31	76.28	73	22.25			20.97	2.67	15.73	3.56	14.30	3.92	44.94
44	13.41	39.47	1.42	34.79	1.61	26.09	2.15	23.72	2.36	74.57	74	22.56			20.68	2.71	15.51	3.61	14.10	3.97	44.33
45	13.72	38.58	1.45	34.01	1.65	25.50	2.20	23.19	2.41	72.89	75	22.86			20.41	2.74	15.31	3.66	13.92	4.02	43.74
46	14.02	37.75	1.48	33.28	1.68	24.96	2.24	22.69	2.47	71.33	76	23.16			20.15	2.78	15.11	3.71	13.73	4.08	43.18
47	14.33	36.94	1.52	32.56	1.72	24.42	2.29	22.20	2.52	69.78	77	23.47			19.88	2.82	14.91	3.76	13.55	4.13	42.61
48	14.63	36.18	1.55	31.89	1.76	23.92	2.34	21.74	2.58	68.35	78	23.77			19.63	2.85	14.72	3.80	13.38	4.19	42.07
49	14.94	35.43	1.58	31.23	1.79	23.42	2.39	21.29	2.63	66.93	79	24.08			19.38	2.89	14.53	3.85	13.21	4.24	41.53
50	15.24	34.73	1.61	30.62	1.83	22.96	2.44	20.87	2.68	65.62	80	24.38			19.14	2.93	14.35	3.90	13.05	4.29	41.02



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